University of Alberta

Conspicuous Control, Credit, and Intrinsic Motivation: Teacher Perceptions of Direct and Meaning-Based Reading Programs

by

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Abstract

Proficiency in reading is crucial to success. Although research indicates that the most effective reading programs use direct instructional techniques, these methods are not widely used. One possible reason is that direct instruction is viewed as controlling, thereby detracting from a student's freedom and autonomy. The use of tangible rewards and reward contingencies may amplify this response.

In three different studies, preservice and practicing teachers read a scenario describing a student in a reading program. Scenarios varied in terms of the teaching procedures (direct / meaning-based), type of reward (tangible / praise), and reward contingencies (performance standard / no performance standard). On a questionnaire, participants rated the instructional program, reward procedures, and the student. Results indicated that participants who read the scenarios describing a direct instruction program rated the student as more likely to improve; they also indicated that the student would feel less autonomous, motivated, and competent than those who read the meaning-based scenario. A path analysis was completed to describe the cognitive processes that mediate the effects of teaching procedures on participants' ratings of intrinsic motivation and attribution of credit. Findings are discussed in terms of Skinner's behavioral theory, attribution theory, and cognitive evaluation theory, as well as practical implications.

Dedication

This dissertation is dedicated to my family, friends, colleagues, and mentors to thank them for their support in reaching this goal and for their ultimate patience.

Judy Cameron and David Pierce. I am not sure that I would ever be able to thank you enough for the guidance, learning opportunities, and knowledge that you provided me. Thank you for the friendship and support you provided outside of my academic endeavours. It was invaluable in this journey!

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Chapter 1

Proficiency in reading is regarded as crucial to success in all academic areas. However, literacy problems continue to have an impact on many learners. In fact, a comparative study of youth literacy skills conducted by the Programme for International Student Assessment (PISA) (2000) found that 18% of Canadian youth had only basic literacy skills while 10% of students had not even acquired basic skills. There have been many different models of reading that have been used to teach reading and to remediate reading difficulties. The debate about the use of direct teaching methods versus meaning-based programs has been particularly prominent in the search to determine the best way to teach students how to read. Based on the research findings, the most effective instructional programs use explicit teaching and structured teacher-student interactions characterized by direct teaching methods (Carnine, Silbert, and Kame'euni, 1990). In spite of successes, many teachers continue to argue for the benefits of meaning-based approaches (see Baumann, Hoffman, Duffy-Hester, & Ro, 2000; Baumann, Hoffman, Moon, & Duffy-Hester, 1997; Evans, Fox, Cermaso, & McKinnon, 2004; Schug, Tarver, & Western, 2001; Snider & Roehl, 2007). Rayner, Foorman, Perfetti, Pesetsky & Seidenberg (2001) report that the dominant instructional approach for the past 20 years has been meaning-focused, even though research in the last 30 years has supported the use of direct instruction. Currently, many teachers identify themselves as using balanced approaches to teaching reading (Cassidy & Cassidy, 1998/1999). However, Pearson and Raphael (1999) have suggested that the use of balanced approaches is simply a way for teachers to infuse a minimal amount of phonics into meaning-based teaching methods and is further evidence of teachers' affinity for meaning-based teaching methods.

There may be many reasons why direct teaching procedures have not been widely accepted. Despite proven successes, one possibility is that the strategies used during explicit instruction are seen as controlling, thereby detracting from a students' freedom and autonomy. The use of tangible rewards, which are also used in direct educational programs, may magnify the perception that students are being controlled. Many teachers have been trained in a tradition whereby the use of structure, control by the teacher, and the use of incentives are seen as negative components to learning programs (Rogers & Freiberg, 1994).

The purpose this research is to examine teachers' perceptions of programs that use direct teaching methods versus meaning-based-approaches to teaching reading. The research also investigated teachers' perceptions of the use of incentives in educational programs. It is hypothesized that when teaching methods are overtly conspicuous (i.e. involve direct teaching procedures and use tangible rewards) teachers will attribute student performance to external motives rather than internal ones. On the other hand, it is expected that teachers will attribute performance to internal factors when there are less conspicuous teaching procedures, such as in a meaning-based program. When internal attributions are made, it is hypothesized that teachers will give more credit to the student and infer that the student is more autonomous and motivated in the future.

Three studies were conducted to assess teachers' attitudes toward meaning-based programs versus direct instruction; the research also investigated teachers' views about the use of token rewards versus praise. In addition, the impact of performance standards for success versus no performance standard were investigated in direct instruction programs. For Studies 2 and 3, path analyses were used to determine factors that mediate the relationship between teachers' views about different teaching procedures, how much credit they give to students for their progress in such programs, and whether teachers will rate students as intrinsically motivated, self-determined and guided by internal factors.

Background to the Present Research

The debate surrounding appropriate instructional models when planning reading instruction has been important to research in education. Although many different models have been developed, the present research focuses on teachers' perceptions of direct instructional approaches and meaning-based or whole language approaches. Hayes (1997) states that teachers' conceptual models of teaching reading guide teaching practice and affect teacher performance and student learning experiences. In addition, a second debate is important to the background of this study. Over the past thirty years, some researchers have argued that the use of rewards in educational setting are harmful (e.g. Deci, Koestner, & Ryan, 1999; Kohn, 1993). Specifically, the view is that tangible rewards and praise are effective in getting students to perform an activity, but performance and interest will only be maintained when there is a reward. The claim is that students' intrinsic interest in an activity will be undermined when rewards are no longer present. Other researchers have contended that negative effects of rewards are limited and that rewards can be used to increase motivation and performance (e.g., Cameron & Pierce, 1994;

Dickinson, 1989; Eisenberger & Cameron, 1996). The present study aims to investigate teachers' perceptions of the use of rewards in classrooms and to determine the effects that teacher beliefs may have on students and programming in reading classrooms.

The Reading Debate

The debate about the best way to teach reading has been alive and well for over 50 years. The debate holds two points of view in opposition. One point of view is characterized by the direct teaching of phonetic rules, the connection between letters and sounds, blending, and reading of controlled text. This approach has also been called "bottom-up", "code-emphasis", or "skill-based". The other method has been labelled "meaning-based", "innatist", or the "whole language" approach to teaching reading. Although there are difficulties defining this approach, it generally focuses on the construction of meaning while reading. The critical distinction between the two approaches is how explicit the instruction is on decoding (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998). Detailed definitions of these two approaches are presented in Chapter 2.

The literature on reading research is extensive. The 1960s and 1970s marked a time when systematic research on reading approaches began. The *Cooperative Reading Research Program in First Grade Reading* (Bond & Dykstra, 1967), Jeanne Chall's analysis presented in *The Great Debate* (1967), and *Project Follow Through* (Becker, 1977) were large-scale studies that investigated different reading approaches. Although the designs and research questions varied over these projects, all three studies determined that there were benefits to using direct teaching methods to teach reading. Recent reading research evaluating the effects of systematic phonics instruction compared to unsystematic or no phonics instruction on learning to read was summarized by the National Reading Panel (NRP) in 2000. The NRP report concluded that systematic approaches to reading instruction help students learn more effectively than unsystematic or no phonics approaches. The NRP report confirmed previous research findings supporting the use of direct approaches to teaching reading.

The Use of Rewards in Educational Settings

The use of rewards in educational settings is also an issue that has generated debate. Over the past 30 years, several educators have denounced the use of rewards due, partly, to their perceived controlling qualities. Other educators contend that rewards can be used effectively to improve performance in a variety of areas, including reading. Reflecting the theoretical debate, some researchers have argued that rewards are harmful and destroy students' interest and motivation in activities (e.g., Deci et al., 1999; Kohn, 1993). Others argue that negative effects of rewards are minimal and easily avoidable and that, when used appropriately, rewards can increase students' motivation and performance (e.g., Cameron, 2001; Cameron, Banko, & Pierce, 2001; Cameron & Pierce, 1994; Dickinson, 1989; Eisenberger & Cameron, 1996).

Over 150 experiments have been conducted on the topic of rewards and motivation. Meta-analytic reviews of the experiments and recent research have shown that rewards can produce negative, neutral, or positive effects (Cameron et al., 2001; Cameron & Pierce, 1994; Cameron, Pierce, Banko, & Gear, 2005; Deci et al., 1999; Eisenberger & Cameron, 1996; Eisenberger, Pierce, & Cameron, 1999; Pierce, Cameron, Banko, & So, 2003). Generally, the meta-analyses show that tangible rewards produce negative effects when a combination of factors are involved. In particular, negative effects are found when tangible rewards are offered and given without regard to the person's performance. Positive effects occur when individuals are rewarded for engaging in low interest tasks and / or for reaching or exceeding an absolute standard (achieving a specific score), a normative standard (doing better than others), or an increasingly challenging standard (mastery) on high interest tasks. Rewards that involve praise or positive feedback also show positive effects on performance and motivation.

Rewards can be used in reading programs to cultivate children's interest in reading. As noted, meta-analyses of reward and motivation experiments showed that rewarding students for performing low interest tasks led to increased performance when the rewards were withdrawn. This finding is of particular relevance to the use of rewards in reading classrooms. Reading is often not initially appealing to students, particularly those students who are struggling readers. Thus, the use of rewards in such settings may be an appropriate way to generate motivation and interest in reading. According to Bandura (1986), it is not until we acquire some proficiency in an activity that the activity becomes rewarding. The use of incentives can be used to build initial interest until natural consequences take over. When skills such as reading come to produce their own reward, incentives can be removed. In a review of the use of incentives in reading programs, Gear, Wizniak, & Cameron (2004) found that effective programs: (a) rewarded students immediately following successful performance; (b) distributed rewards for meeting clear standards; (c) gave rewards for increasingly challenging tasks; (d) used rewards that students enjoy; and (e) phased out rewards as student performance increased.

Although the research indicates that rewards can be used effectively to increase student performance and motivation, rewards and incentives are not used by teachers who advocate meaning-based programs.

Theoretical Perspectives

Attribution theory, self-determination theory, and Skinner's behavioral theory are central to the hypotheses in this study. Attribution theory (Heider, 1958; Kelley, 1967; Weiner, 1980, 1985) is concerned with the processes used by the perceiver in assigning causes to others' behaviour. External attributions are made when the perceiver attributes behaviour to a cause external to the person while internal attributions are made when the perceiver assigns an internal or intrinsic cause to behaviour. Weiner (1980) demonstrated that the different meaning that people assign to outcomes can create different emotional and behavioral reactions. Thus, from an attributional viewpoint the attributions teachers make, either internal or external, may influence emotional and behavioral reactions towards their students. In the present research, it is hypothesized that the attributions that teachers make about students in different types of reading programs influence the amount of credit they give to students.

Self-determination theory (SDT) proposes that students are active organisms striving towards psychological growth and development (Ryan & Deci, 2000). According to SDT, classroom settings that are autonomy-oriented (where learning is self regulated) promote intrinsic motivation, higher self esteem, and better performance (Deci et al., 1981; Grolnick & Ryan, 1987). From this perspective, meaning-based or whole language approaches to teaching reading would be viewed as autonomous situations. In contrast, instructional strategies such as explicit, direct teaching methods would be considered controlling and would be regarded as detrimental to students' intrinsic motivation, self esteem, and performance. According to SDT, the use of rewards in classrooms is also controlling and leads students to feel less free and autonomous. SDT views tangible rewards tied to performance demands as the most controlling. SDT deals primarily with how students experience rewards and/or autonomy- supportive versus controlling contexts. The present study focuses on teachers' perceptions of different classroom contexts and reward procedures. It follows from the predictions made by SDT that teachers will perceive the use of direct teaching strategies and rewards as more controlling and less motivating than the use of meaning-based approaches for teaching reading. From the SDT perspective, teachers will also perceive the students in a direct program as feeling less autonomous, less intrinsically motivated, and less confident about their performance.

B.F. Skinner also addressed the issues of self-determination, autonomy, control, and freedom. In his landmark book, *Beyond Freedom and Dignity*, Skinner (1971) argued against the notion of "autonomous man" as the guiding force in human behavior. Skinner rejected the individual as a causal agent. He argued that human behavior changed the environment and these changes in turn caused subsequent human conduct. From this behavioral perspective, freedom is an illusion. Control is inevitable (although control can be positive or negative).

Skinner noted, that in Western Culture, people are conditioned to value freedom. Individuals strive to be seen as autonomous and free from control. Through socialization practices, we have learned to place greater value on people's accomplishments and successes when they appear to be spontaneous rather than a result of any overt external factors such as instruction, training, or coaching. From Skinner's perspective "we recognize a person's dignity or worth when we give him credit for what he has done" (p. 58). Credit according to Skinner is related to how conspicuous the controlling factors are that lead to a person's behaviour. Specifically, Skinner contended that when there are obvious or conspicuous reasons for behaviour, observers give less credit to the actor for the behaviour. If we are unable to see how a person's achievements came about, we give that person more credit for his/her actions and deeds. As well, when there are no obvious reasons for behaviour observers view actors as free, self-determined, autonomous, and of higher self worth.

For the present studies, Skinner's theory would suggest that when there are conspicuous causes for behaviour teachers will attribute performance to an external cause. As well, teachers will view the student as more worthy when there are inconspicuous causes for behaviour. That is, teachers will give less credit to students who perform in classrooms with obvious teaching techniques (direct instruction) and tangible rewards and give more credit to students who are performing in settings where the contingencies are obscure (meaning-based instruction) and praise is used.

The Present Research

The present research is designed to determine the influences that different instructional procedures (use of direct teaching methods vs. meaning-based programs, and the use of rewards) have on teachers' perceptions of students in a reading program. To test the theoretical predictions of SDT, attribution theory and Skinner's behavioral theory, three separate studies were completed. In the first study, pre-service teachers, who did not have any practicum experience, were administered three different scenarios. The scenarios varied in terms of whether they described the use of a direct instructional technique (with praise or a token reward) or a meaning-based approach (with praise) to teach reading. In the second study, pre-service teachers, who had completed practicum experience, were administered one of six scenarios. Four of the scenarios described a direct instruction program. The scenarios varied in terms of the type of reward the student received (token or praise) and whether or not the student in the program needed to reach a performance standard to receive the reward. Two scenarios described a meaning-based program that varied in the type of reward (token or praise) the student received; however, the student in the meaning-based scenario did not need to reach a performance standard to receive the reward. In the third study, the same six vignettes were administered to practicing Alberta teachers.

In each of the studies, a questionnaire was administered after participants read one of the scenarios. The questionnaire was designed to investigate how controlling the teachers viewed the strategies, teachers' judgments of how the strategies made the student feel, how much credit the teacher would give the student, whether the teachers attributed performance to internal or external causes, perceived competence of the student, and how motivated the teachers thought the student was in the program and in the future. In addition, practicing teachers were asked whether the program described is similar to how they teach reading and how similar the program described is to how they were taught to teach reading at University. The purpose of this portion of the questionnaire was to determine the types of instructional techniques Alberta teachers are using and differences between practice and theoretical influences.

Along with theoretical implications, the present research has practical implications for the field of education. Primarily, the results of the research provide guidance in determining the components of reading programs which may be more widely used by educators. That is, if programs have less conspicuous contingencies, they may have a better chance of being implemented into schools. Also, the research could provide further insight into the cognitive processes that teachers undergo when making decisions about instructional procedures. A better understanding of this dynamic provides useful information when working with struggling students.

Chapter 2

Literature Review

In this chapter, the literature on the reading debate, the use of rewards in educational settings, and the theoretical orientations related to the present research are reviewed. To begin, definitions of the instructional procedures used to teach reading are examined. Following this, past and current research on effective methods of teaching reading are reviewed. Next, theoretical perspectives that influence the present research are presented. The chapter ends with a brief outline of the purpose of the present research, the specific hypotheses and theoretical predictions, and the practical implications of this research.

The Great Debate

The debate about the best way to teach children to read has ebbed and flowed along with theoretical shifts in education. The debate appears to have taken on new meaning in the 1950s when Noam Chomsky and B. F. Skinner debated how children process language. In this debate, Skinner, a behavioral psychologist, explained language as a learning process that involved shaping language through reinforcement. Chomsky, on the other hand, described language acquisition as an innate biological ability that all humans possess. The debate between behavioral and innatist or nativist viewpoints has spilled over into many other areas of psychology, including educational psychology. Although these two philosophical and psychological powerhouses are rarely mentioned in the current reading literature, they have made permanent and substantial marks on the debate about how children learn to read.

The debate about reading holds two points of view in opposition. One point of view uses terms such as “meaning-based”, “innatist”, “top-down”, “psycholinguistic”, or “whole language”. The opposing point of view is often termed “code-based”, “bottom-up”, “skills approach”, “phonics”, or “direct instruction”. Smith (1994) points out that Chomsky’s spirit pervades the whole language movement and Skinner’s behaviourist theory lives on in direct instruction points of view. Many people in the field of education have taken strong positions on one side or the other. If their perspective is not strongly in favour of one position, educators still tend to teach one way or the other.

Jeanne Chall (1967) labelled the dispute between the two sides as “The Great Debate”. The debate has often been characterized as meaning-emphasis vs. code-emphasis in the literature. Foorman et al. (1998) stated that the key difference between the two approaches is conceptions of how *explicit* decoding instruction needs to be. Code-emphasis versus meaning-emphasis conceptualizations capture the extremes on the continuum of explicitness (Chall, 1983; Foorman, 1995). Teachers’ perceptions of the explicitness of instruction is central to the present study. Although the debate has been longstanding, it has not been resolved. Currently, the use of ‘balanced’ approaches has provided another facet to the debate on the best way to teach reading. In fact, Reutzel and Smith (2004) contend that at no time since the 1960s has there been so much funding and attention on reading instructional practices as there is today.

McGuinness (2004) points out that the volume of research on reading has become so substantial that it is unmanageable. However, McGuinness suggests that there is a lack of research that is methodologically sound. For example, the National Reading Panel (NRP) (2000) reported that there have been 1,072 studies carried out on reading instruction in the last 30 years. However, when they applied the following criteria: (a) that the research be published in a refereed journal, (b) that the research compared at least two methods, (c) that studies used random assignment of participants into comparison groups, and (d) that studies provided sufficient statistical information to compute effect sizes (National Reading Panel, 2000), only 75 studies survived. A more in-depth analysis revealed that only 38 studies were found to be methodologically sound. The lack of sound research is indeed a problem in reading research. In the following section, a brief historical analysis of the reading research is provided. In particular, the focus is on the recent NRP report. To begin, a definition of reading programs, particularly those that are the focus of the current research, is presented.

Definitions of Reading Programs

Defining different types of reading programs has become a daunting task and is likely one of the reasons that there is limited quality research in the area. There appears to be little consensus on terminology. A definition of terms provides some clarity in the instructional strategies discussed.

Direct Instruction of Reading

Foorman et al. (1998) described a reading program entitled "direct code". This program emphasized the direct teaching of phonic rules using sound-spelling cards, alliterative stories, and controlled vocabulary text to practice the rules students learned. A key component to the program was the use of decodable texts to read.

Blachman, Tangel, Ball, Black, & McGraw (1999) described another explicit, systematic program used in a study of an intervention program for low-income children. This program involved directly teaching all letter sounds, using workbook pages to practice connecting letters to sounds, and learning some high frequency words. The program also involved instruction in phoneme analysis and blending, practicing quickly reading words students had learned, reading phonetically controlled passages, and dictation activities. These programs are consistent with how direct instruction is defined in the present study.

A document published by the Center for the Improvement of Early Reading (2003) stated that effective programs offer phonics instruction that involve teachers explicitly and systematically instructing students how to relate letters and sounds, how to break spoken words into sounds, and how to blend sounds to form words. In addition, systematic phonics programs involve helping students apply their knowledge to read words, and include alphabetic knowledge, phonemic awareness, vocabulary development, and the reading of text, as well as systematic phonics. In the NRP (2000) report, systematic instruction was contrasted with instruction that is not systematic in this way:

> Systematic phonics instruction typically involves explicitly teaching students a prespecified set of letter-sound relations and having students read text that provides practice using these relations to decode words. Instruction lacking an emphasis on phonics instruction does not teach letter-sound relations systematically and selects text for children according to other principles. The latter form of instruction includes whole word programs, whole language

> programs, and some basal programs. (pp. 92)

This is an important distinction that is used in the scenarios for the current study.

It is important to note that there are several commercial programs that utilize explicit teaching of reading. Ehri, Nunes, Stahl, and Willows (2001) identified seven specific phonics programs that were evaluated during the NRP's meta-analysis. These programs were Direct Instruction, Lovett Direct Instruction, Lovett Analogy, Lippincott, NRS by Beck and Mitroff, Orton-Gillingham, and Sing, Spell, Read, and Write. Although these programs adhere to the description of systematic instruction, it is not necessary to use a commercial program in order to use explicit instructional methods in the teaching of reading.

Meaning-Based / Whole Language Approaches to Teaching Reading

Whole language is particularly difficult to define and yields many different definitions from different people. In the Foorman et al. (1998) study discussed previously, a second group of instructional methods were labelled "implicit code" and involved implicit instruction in the alphabetic code while reading connected text. Central to this approach was the emphasis on a print-rich environment. In addition, the teacher was seen as a facilitator rather than the director of student learning. Children's construction of meaning was central and an emphasis on the integration of reading, spelling, and writing into literacy activities provided a context for phonics. In this group, there was an emphasis on classroom interaction and on response to literature. Learning centres were utilized often. Teachers used shared and guided reading to draw children's attention to specific words or word forms, letters, sounds, patterns, meanings, making predictions, listening for rhymes and exploring the use of strategies, grammar, language use, spellings, or key ideas in the text. Therefore, learning of the alphabetic code was incidental to the act of making meaning from print. This description is consistent with the definition of a meaning-based program used in the current study.

Dahl and Schraer (2000) acknowledged the dispute about whole language definitions and developed selection criteria for whole language classrooms that were based on the literature. They identified five criteria that whole language classrooms had in common. Whole language classrooms were described as: (a) child-centered (focus on children and their patterns of literacy development); (b) programs that use a teaching approach whereby reading and writing are taught as a meaning-centered approach through experiences connected with text; (c) programs that use a wide selection of children's literature; (d) programs that provide a literate environment where reading and writing are used as tools for learning; and (e) programs that involve collaboration among children. It is important to note that phonics is not totally left out of whole language classrooms. In fact, it has been described as an important part of the reading process that should be used along with other information (Goodman, 1993). However, the teaching of phonetic concepts is not done explicitly or systematically. Instead, phonics instruction is woven into other whole language activities or addressed when students inquire about how to read or write words (Dahl & Schraer, 2000). Due to the student-centered instructional methods used in this approach, there are no commercial programs that are used to teach reading in this manner.

Basal Reading Programs

It is often contended that the whole language movement arose as an antithesis to basal reading programs. Most people are familiar with sentences such as "Look, look, look" because they were used when they were in school. Basal reading programs generally focus on whole-word or sight word activities and pay only limited attention to letter-sound relationships. Little or no instruction is provided on how to blend letters to pronounce words. McGuiness (2004) described basal programs that were examined by Chall (1967). In these programs, students read stories that gradually increased in length through repetition. New words were introduced at a rate of 1-2 words per 100 running words. Teachers were encouraged to focus on the meaning of the words, as well as the visual elements of a word. Each lesson revolved around a story and involved preparation for reading the story (establishing a background), presentation of new words, guided reading, and follow-up activities. Workbooks are generally used to practice the new words that are learned. There are some phonics lessons that are included in basal manuals. However, McGuiness (2004) states that there is no clear systematic method to teaching letter sounds. The first step in basal programs is to read for meaning and master a sight vocabulary. Phonics is viewed as secondary. It is important to note that more recent basal programs do attempt to include a more systematic approach to phonics instruction.

Balanced Approaches

Although code-based or phonics approaches and meaning-based or whole language approaches are presented at the extreme ends of the spectrum, there are approaches that use a combination of reading techniques and fall somewhere in the middle on the continuum. Whole language has been described as a set of beliefs (Altwerger, Edelsky, & Flores, 1987). Similar to whole language, balanced reading is not seen as a single approach or practice (Fitzgerald, 1999). There have been many different characterizations of balanced programs. Balanced programs have been described as blending aspects of curriculum (e.g. Hiebert & Colt, 1989); blending aspects of instruction (e.g. Cunningham & Hall, 1998); equally weighing curriculum and instruction that has been seen as antiethical (e.g. Baumann & Ivy, 1997; Freppon & Headings, 1996); and as a decision making approach to assist individual children (Spiegel, 1998). Fitzgerald and Cunningham (2002) identified three common characteristics to definitions of balanced programs. Commonalities include emphasis on the equal weighting of "something", a focus on teaching method, and a shared perspective on elements of the reading process that are most important. Fitzgerald and Cunningham argue that balanced reading approaches are diverse and are based upon a common set of theoretical and epistemological understandings about the central goals for student's knowledge about reading. Pressley (2006) defines balanced instruction as a combination of whole language and skills instruction that creates instruction that is more than the sum of its parts.

The increasing emphasis on balanced approaches to teaching reading is evidenced by surveys of reading professionals (Cassidy & Cassidy, 1998/1999) who declared "balance" as one of the hottest topics in reading education. As well, a survey of teachers conducted in 2000 (Baumann, Hoffman, Duffy-Hester, & Ro) indicated that the majority of teachers described themselves as having a balanced, eclectic attitude toward reading. It is important to note there is concern that these approaches may be used haphazardly (McGuiness, 2004; Rayner et al., 2001) or may simply be approaches that represent outgrowths of the whole language movement (Moats, 2000). Pressley (2006) warns that teachers can be misinformed about balanced approaches and admits that the term can be used as a smokescreen for other positions.

In reality, teachers likely use several different instructional approaches. Pearson & Raphael (1999) suggest that the term balance has advocates on both sides – those who wish to infuse balance into whole language programs and those who identify code emphasis as the cornerstone of a balanced program. Rayner et al. (2001) also state that what balanced instruction involves varies in the explicitness with which skills are taught. They argue that the continued dichotomy of reading philosophies produces fragmented instruction rather than an integrated balance of skills and meaningful application. In other words, teachers continue to lean one way or the other on the continuum of reading instruction.

Summary of Reading Literature

A search of the ERIC database using the term "reading research" resulted in 1 3726 articles and books on the topic. The amount of research in this area is daunting. In order to provide a summary of reading research to date, a brief examination of past reading research will be undertaken. Then, the current research, particularly the NRP metaanalysis, will be examined. Finally, research pertaining to whole language and balanced approaches will be reviewed.

Past Research on How to Teach Reading

In her book *Early Reading Instruction: What Science Tells us about How to Teach Reading* McGuinness (2004), proposed that prior to the 1960s researchers believed that an effective method to teach reading would override other factors such as the school, the classroom, the teacher, etc. Therefore, one could compare classrooms using method X to classrooms using method Y and one could determine which method was the most effective. Researchers quickly found that one method could work in one school and not another or in one classroom, but not another. There obviously were several confounding variables or factors that would influence results. Therefore, researchers realized the importance of taking baseline measures prior to implementing various methods. Secondly, researchers began to realize the importance of using valid and reliable measures, such as standardized tests, in order to assess changes in reading performance so that results could be easily compared. In addition, prior to the 1960s, most research used mean scores and it was impossible by comparing them to determine how much better is "better". Another problem was that reading programs were not "pure". That is, the length of time in programs, the sequence of programs, etc. were not standardized. Therefore, the question became what exactly about different programs was making the difference in performance. This question continues to be of critical importance to reading research today.

Overall, reading research answered few questions until a more rigorous approach was used. McGuinness (2004) contends that systematic research on reading began with a project titled the *Cooperative Research Program in First Grade Reading Instruction* in 1964.

Cooperative Research Program in First Grade Reading. After the publication of *Why Johnny Can't Read* (Flesch, 1955), there was significant concern about whether using basal reading approaches, which were used in up to 95% of classroom (Austin & Morrison, 1963), were the most effective way to teach reading. In an attempt to answer this question, as well as other questions about reading, Bond and Dykstra (1967, reprinted in 1997) developed a complex project whereby 27 studies were funded that compared basal reading programs to another type of program. The instructional approaches evaluated included Basal, Basal plus Phonics (a program that added a separate phonics component to Basal reading program), i.t.a. (use of standard and special letters to represent the 44 English phonemes), Linguistic (focus on letter names and reading short predictable words from word families), Language Experience (use of the child's vocabulary to develop reading and writing skills), and Phonic / Linguistic (emphasis on the teaching of the relationship between sounds and letters and immediately connecting this information to read words). Demographic data was collected on the children, the teachers, the community, and the school. In addition, measures of baseline reading rates and intelligence were given to the children. At the end of 140 days, several different measures of reading were given to the children.

Bond and Dykstra (1967, 1997) conducted several correlational analyses and concluded that the ability to recognize letters of the alphabet before beginning to read was the single best predictor of first grade reading ability. They also found that Basal plus Phonics programs produced significantly greater gains than did Basal materials alone. McGuinness (2004), however, highlighted some significant statistical problems with the study which appear to invalidate many of the results. A reevaluation of the data by McGuinness (2004) found that instructional programs emphasizing sound-symbol regularity, a controlled reading vocabulary that is introduced systematically, copying letters, words, and phrases, saying the sound the symbol stands for, and reading stories that target a particular phoneme were the most effective. McGuinness also concluded that being taught to decode is more beneficial than memorizing sight words. These conclusions are consistent with "code-emphasis" approaches. This large-scale study highlighted some of the problems with reading research and became a starting point for more systematic and rigorous research.

Jeanne Chall's The Great Debate. During the same time as the Cooperative Research Program began their research, Jeanne Chall began a quest to provide an analysis of reading programs and teaching methods and a summary of the research on reading to date. The investigation involved interviews with people who developed reading programs, an analysis of 22 reading programs, classroom observations, and a review of the research literature. The investigation resulted in the publication of the book *Learning to Read: The Great Debate* which was published in 1967 with updates in 1983 and 1993.

As reported earlier, most teachers at that time were using basal reading programs to teach reading. Chall's investigation looked at phonics and linguistic programs, in addition to basal reading programs. Chall concluded, from her analysis, that stronger phonics or programs that focused explicitly on decoding skills produced higher reading achievement. Specifically, learning the alphabetic code or learning sound symbol relationships were necessary for early reading. Chall also concluded that students learn less when a meaning-emphasis approach is utilized before students know how to use the "code". Chall pointed out the importance of good teaching and instructional materials that are at an appropriate level of difficulty. In subsequent revisions, Chall reviewed further evidence of a code-emphasis program as compared to a meaning-emphasis program such as whole language or literature-based approaches. In each revision, Chall collected more evidence to support the notion that code-emphasis programs are superior to other approaches. Pressley (2006) also contends that most of the new findings since Chall's original edition (1967) are compatible with Chall's initial conclusions.

Project Follow Through. Project Follow Through was another large-scale project that was influential in modern reading research. This study drew particular attention as it was a U.S. federally funded, longitudinal project that lasted for several years in the late 1960s and early 1970s. The purpose of the study was to "select, test, and evaluate promising, but different educational programs for disadvantaged youngsters in the first three grades" (Becker, 1977, p. 519). Project Follow Through was ultimately used in 180 communities and served 75,000 students per year through 20 different educational models. The programs fell roughly into three groups: those that focused mainly on academic skills, those that emphasized cognitive development, and those that focused on affective development. Generally, the academic approach was the most successful with a program titled DISTAR (Engelmann & Bruner, 1969) or Direct Instruction (DI) being the most successful of the group. DISTAR is a structured program that utilizes a scripted teaching format, unison oral responding, strategic correction principles, teacher signal, and systematic feedback to explicitly teach reading skills (Kame'euni, Simmons, Chard, & Dickson, 1997). Initial analysis of the Follow Through data found that students in a DI approach consistently outperformed students in approaches based on language-experience, discovery learning, and open education (Stebbins, St. Pierre, Proper, Anderson, & Cerva, 1977). However, at that time, many educators perceived the DI program as too rigid and, despite the positive results, it was not embraced by the educational mainstream (Viadreo, 1999). In addition, there was an influx of negative publicity as researchers claimed that students in the Direct Instruction program had higher rates of emotional problems and felony arrests when its students reached late adolescence and early adulthood (Bereiter, 1986; Schweinhart & Weikart, 1997). It is hard to believe that an educational program would lead to these consequences and such claims were ultimately discredited by Mills, Cole, Jenkins, and Dale in 2002.

Several secondary analyses were also completed on the Project Follow Through data by comparing Follow Through sites with non-Follow Through sites (Becker & Carnine, 1980; Gersten, Becker, Hiery, & White, 1984). The overall results of Project Follow Through revealed that the DI approach led to greater gains in basic skills, problem solving, and affective learning than other models (Kame'euni et al., 1997). However, although these children continued to perform better than their matched peers, the children were unable to maintain many of the gains that they made while in the program. Becker and Gersten (1982) hypothesized that this inability to maintain gains may be due to the lack of challenging work and a lack of effective instruction to build on skills once the DI program was completed.

McGuinness (2004) highlighted the importance of this study as it showed the accomplishments that can be made with disadvantaged students and highlighted the importance of longitudinal studies of reading.

Watkins (1995) attempted to identify why the results of the Project Follow Through evaluation did not impact the policies and practices of the educational community. Watkins argued that Project Follow Through demonstrated that public policy is based on public support and not on empirical evidence. Therefore, the position that officials adopt is most likely to be congruent with the position of the majority. The Direct Instruction model was identified as a minority view in education. In addition, the data from Project Follow Through fails to support the philosophy that dominates colleges of education. One reason for a lack of support in colleges of education is that educators accuse direct instruction techniques of ignoring the "whole child" by focusing on academic achievement at the expense of affective development. However, Watkins points out that the Direct Instruction model was found to be more effective than other models on measures of self esteem. Finally, practicing teachers may not recognize that their current methods are not effective due to training from University, practicum training, and published materials.

Many lessons could have been learned from these early studies of reading. However, McGuinness (2004) states that the insights from these studies were lost for the next 30 years. That is, many of the findings from the previous studies needed to be replicated 30 years later because research in the area of reading essentially stopped after the 1960s and 1970s. Perhaps the complexity of these studies and the resources needed to conduct such large scale studies were deterrents for further similar studies. Marilyn Adams' book *Beginning to Read* (1990) initiated more current research on teaching reading. As well, in 2000, the National Reading Panel (NRP) attempted to review modern studies to determine what the current research supports in terms of how to teach children to read.

Recent Research on Reading Instruction

McGuinness (2004) argues that, although past research provided valuable insights into reading instruction, many researchers concluded that the impact of teachers could not be partialled out of studies on reading methods and, therefore, further reading research was essentially a waste of time. That is, it was concluded that it did not matter what instructional reading approach was used as long as students had a good teacher. In fact, the research against basal readers appeared to open the door for the whole language movement that advocated for the use of authentic literature rather than Dick and Jane readers. The results have been that teachers have been blindly using techniques or programs to teach reading that may not be supported by scientific research. On the other hand, methods that have been proven to be effective have not been widely utilized. This seems counterintuitive to most researchers. Marilyn Adams (1990) began an updated analysis that instigated more current research on teaching students to read. Furthermore, in an attempt to determine the effectiveness of different types of reading instruction, the U.S. Congress convened a national panel to review and evaluate research on reading instruction. The goal of the panel was to use the findings of the panel to inform policy and practice in reading classrooms (National Reading Panel, 2000).

Adams's (1990) reviewed Chall's (1967, 1983) conclusions and also reviewed evidence provided since the publication of Chall's books to support the explicit teaching of phonics. Importantly, Adams refuted the contention of whole language theorists that skilled readers use semantic, syntactic, and graphemic-phonemic cues to guess an unknown word. Adams detailed that this is not consistent with data on skilled readers which indicates that skilled readers sound out words that they do not know. Adams made the case that readers use letter and word level cues to read words and texts designed to teach students to read should support the development of these skills.

Adams (1990) concluded that, with impressive consistency, instructional approaches which include systematic phonics instruction lead to higher achievement in decoding, particularly in the earlier grades. This finding is important, particularly for struggling and economically disadvantaged readers. Phonics programs for these at-risk students tend to be given in suboptimal ways. Adams questions why phonics has been so loudly protested, but provides little insight into reasons for this.

The National Reading Panel Results. In order to evaluate the research on effective reading instruction, different subgroups were formed. Of particular interest to the current study is the analysis of systematic phonics instruction. An initial search of the literature by the NRP found 1 072 studies on reading instruction. However, only 75 studies met the initial screening guidelines of (a) use of an experimental or quasi-experimental design with a control group, (b) published in a refereed journal after 1970, (c) data to test the hypotheses that systematic phonics instruction improves reading performance more than other programs, (d) reading as a measured outcome, and (e) statistics reported in a way that effect sizes could be computed. From the 75 studies, only 38 reports could be used due to problems such as absence of control groups or inadequate statistical procedures. This seems to be a very small number of viable studies given the immense amount that has been written on the subject.

A quantitative meta-analysis was conducted to evaluate the effects of systematic phonics instruction compared to unsystematic or no phonics instruction on learning to read (Ehri et al., 2001). Specifically, the meta-analysis was designed to determine if phonics instruction is more effective under some circumstances than others (i.e. in earlier grades, with small groups, with students labelled reading disabled), whether phonics instruction improves comprehension, and whether or not the instruction given to control groups (i.e. whole language approaches) makes a difference.

The results of the meta-analysis were interesting. Ehri et al. (2001) reported that the conclusion drawn by earlier researchers that systematic phonics instruction helps children learn to read more effectively than unsystematic approaches or no phonics instruction was correct. The authors reported that the overall effect of phonics instruction was moderate ($d = 0.41$) and that the effects persisted after instruction had ended. Phonics was more effective when it was used in earlier grades (kindergarten and grade 1) than in later grades. In earlier grades, phonics instruction also benefited reading comprehension. Systematic phonics programs were also found to help prevent reading difficulties for those at risk for reading problems and with children already diagnosed as having a reading disability. However, systematic phonics instruction did not benefit poor readers who had other general cognitive difficulties. When systematic phonics programs were examined, they were not found to differ significantly from each other. However, they all produced a significant advantage in reading.

The NRP report (2000) also sought to examine how systematic phonics approaches compared to other approaches to teach reading. This was particularly important given the fact that many different approaches have been used over the last 30 years. The experiments in the database included several different groups including basal programs, whole language programs, whole word programs, and regular curriculum. Results showed that systematic phonics programs produced better reading than every type of program. All effect sizes were positive and statistically greater than zero. Ehri et al. (2001) point out that many of the control group programs included phonics elements and that the effect sizes observed were likely to be underestimates. The NRP (2000) concluded that there was enough evidence in the meta-analysis to recommend the implementation of systematic phonics programs to teach reading. The report appears to be a step forward because recommendations were made based on scientific research rather than other, seemingly cryptic methods that have been used previously to decide how to teach reading. The NRP report led to the Reading First (2002) program which provided additional assistance to school divisions implementing research-based reading programs.

The NRP report has not been without its critics. Garan (2005) has voiced several criticisms of the report. In particular, Garan contends that the results of the meta-analysis are an “overgeneralization”. In addition, the report was criticized for using a model of medical research to examine a complex, behaviorally based discipline. There were also criticisms pertaining to the philosophical imbalance of the panel, flawed research procedures, and the misreporting of findings (Garan, 2005; Garan, 2001; Yatvin, Weaver, & Garan, 2003). Garan (2005) condemned the report for using tests of isolated skills, rather than measures of comprehension to measure reading. In a reanalysis of the data, the critics Camilli, Vargas, and Yarecko (2003) state that the evidence supporting the statement that systematic phonics programs are more effective at improving reading than unsystematic programs is ambiguous. These criticisms have been addressed in a book by the National Reading Panel titled *The Voice of Evidence in Reading Research* (2004).

Second grade supplementary reading instruction.

Much of the research on reading instruction has been conducted with students just learning to read. Therefore, most studies focus on students in Kindergarten or first grade. Berninger, Vermeulen, Abbott, McCutchen, Cotton, Cude, Dorn & Sharon (2003) indicated that little research has been done on effective instructional interventions during second grade, when some students still struggle with word reading skills. This study is included in the present review because the research conducted focused on remedial reading instruction in the second grade. In Berninger et al.’s experiment, 96 second graders were randomly assigned to one of four conditions: explicit and reflective word reading, explicit and reflective reading comprehension, combined explicit word recognition and explicit reading comprehension, or treated control that practiced reading skills without any instruction. The researchers found that the most effective instruction for increasing phonological decoding was combining explicit instruction in both word reading and reading comprehension.

Studies on Whole Language.

Although adequate research on phonics programs is sparse, there is even less work done on whole language classrooms. In 1989, Stahl and Miller attempted to review comparisons between whole language programs and traditional (basal reading programs) and could only find 46 studies dating back to 1960. Only 17 of those studies included enough statistical information to analyze. In their analysis, Stahl and Miller (1989) did not find an overall difference between whole language and basal reading approaches with whole language/language experience approaches producing lower effects on comprehension measures. They discovered that whole language approaches were more effective in kindergarten than in first grade. Stahl and Miller concluded that whole language appeared better at developing word recognition than comprehension.

Stahl, McKenna, and Pagnucco (1994) attempted to update their analysis and found 45 studies, using both qualitative and quantitative measures, comparing whole language and traditional approaches published between 1988 and 1993. Only 17 of these included numerical data. The authors commented on the lack of research during this time as the late 1980s and early 1990s was a time when there was widespread implementation of whole language procedures. The authors found that, of the 45 studies, only 20 studies used measures of reading achievement. Twenty-two studies used affective measures such as attitude toward reading or self-esteem.

Stahl, McKenna, and Pagnucco found that, overall, whole language programs appeared to have a small effect on reading comprehension; however, there were too few studies to determine whether or not the effect was statistically significant. On affective measures, there seemed to be no difference on measures of attitude, orientation to reading, and motivation. This finding was interesting given the argument that whole language classrooms improve motivation to read by using interesting reading materials. The authors also replicated findings from the 1989 analysis confirming whole language effectiveness in kindergarten.

Jeynes and Litell (2000) conducted a meta-analysis to determine the effectiveness of whole language instruction in increasing reading skills of low-SES students in kindergarten to grade 3. The authors looked at 14 studies that examined the effects of whole language, basal, and eclectic programs. Overall, the authors suggested that low SES students do not benefit from whole language instruction compared to basal instruction on standardized tests. In fact, the authors suggest that the use of whole language methods could widen the gap between advantaged and disadvantaged learners. Jeynes and Littell do note, however, that the use of unstandardized tests may have resulted in different results.

Whole language advocates contend that their program is research-based. However, much of this research appears to come from a theoretical perspective. It is particularly concerning that the contention of whole language enthusiasts that readers engage in a psycholinguistic guessing game based on cues in the word (Goodman, 1967). However, this is not consistent with data that skilled readers sound out words (Barron, 1986), while poor readers rely on context cues and often misread words (e.g. Nicholson, 1991; Nicholson, Lillas, & Rzoska, 1988). It appears as though little rigorous scientific research has been used to test the effectiveness of these programs. Rankin-Erickson and Pressley (2000) found that most special education teachers nominated as effective in teaching elementary students with disabilities identified with a whole language philosophy. The question that needs to be answered is why these programs are being used if they are not supported by educational research? The current research attempts to answer this question.

Research on Balanced Instruction

Currently, there is little empirical research that shows that balanced reading instruction is associated with increased reading achievement (Pressley, 2006). Two studies were identified that measured the effectiveness of balanced reading instruction. Guthrie, Schafer, and Huang (2001) found that balanced reading instruction significantly predicted reading achievement. High levels of opportunity to read and balanced reading instruction, which the researchers defined as learning to comprehend in teacher-directed, instruction-specific cognitive skills, were found to be beneficial in improving reading achievement. Similar to whole language, the researchers used a philosophical definition rather than a specific program to teach reading.

Wharton-McDonald, Pressley, and Hampston (1998) found that that the most effective teachers demonstrated an instructional balance, focusing on opportunities to read and decoding skills. Specifically, effective instructors taught decoding skills explicitly and provided students with the opportunity to engage in authentic reading. One criticism of Wharton-McDonald et al.'s review of balanced reading instruction is that, in direct teaching classrooms, teachers often provide students the opportunity to read texts that student's choose. Therefore, it is difficult to discern how the instructional procedures described by Wharton-McDonald et al. are significantly different from classrooms which have been classified as 'skills-based' or 'direct.' The researchers also noted that teachers who were less effective combined skill-based instruction and whole language approaches in disjointed ways. This is concerning given that balanced literacy has been criticized for a lack of systematic instruction and the fragmentation of literacy instruction (Rayner, et al., 2001).

Why aren't programs using explicit teaching procedures widely used?

There are many possible reasons why explicit, direct teaching procedures are not used to teach all students how to read. Jeanne Chall (1996) provided some possible reasons why practice does not follow research. Some suggestions are that there is a strong negative attitude toward word recognition as some researchers do not believe that recognizing words is actually reading (Stanovich, 1987), that code emphasis approaches overlooked cognitive psychology by focusing on a more behavioral approach to teaching reading (Williams, 1985), and that there are misinterpretations about what phonics programs are all about (Stahl, 1992). Chall suggests that meaning-based programs promise more joy, more fun, and less work. These programs, particularly whole language programs, focus on the child's motivation to read. Chall contends that this is a romanticized view of learning that regards the child as self-motivated and joyous but there is no consideration of children who have not had the resources at home and who have difficulty learning to read. Adams (1990) suggests that the reason that there has been resistance to teaching reading is because it appeals to beliefs that the child's experience at school should reflect purposeful learning in authentic contexts. Pressley (2006) contends that meaning-based programs are appealing to teachers due to such program's child-centered nature and the long history of appeal of models that focus on the natural development of children in authentic contexts.

What is apparent is that explicit, direct methods to teach reading have been supported in both past and present research. However, these methods are not used in every classroom. In fact, many teachers adhere to whole language approaches to teach reading, even when readers are struggling (Rankin-Erickson & Pressley, 2000). A similar situation has been found in the teaching of scientific concepts (Mayer, 2004). In a review of research on the teaching of different areas of science, Mayer found that guided or direct instruction by the teacher led to the most effective learning of scientific concepts and rules. In spite of the evidence, Mayer pointed out that many teachers continue to advocate pure discovery methods in which students are expected to discover concepts and rules on their own with no guidance from the teacher. In a report on schoolwide reform in the US (Herman, 1999), 24 programs were identified and evaluated. Direct instruction was one of the three programs that showed strong evidence of positive effects on student achievement, but was implemented by only 1.8% of schools in the study. The present research is designed to investigate how teachers' perceptions of different instructional methods of teaching reading may impact whether or not teaching procedures and programs that are supported by research are implemented in reading classrooms.

Use of Rewards in Reading Instruction

The use of rewards and incentives in educational settings, including reading programs, as a way to improve student performance and motivation has generated a lot of controversy. On one side of the debate are those that argue that rewards are detrimental, reduce intrinsic motivation, and negatively affect performance (e.g., Deci & Ryan, 1999, 2001; Kohn, 1993). For example, these researchers have suggested that if a child who enjoys reading is externally reinforced with incentives such as points or money, the child may choose to read less frequently when the incentive is discontinued (Deci et al., 1999; Lepper & Greene, 1978). On the other side of the debate are researchers that claim that the negative effects of rewards are limited and that rewards can be used to increase motivation and performance (e.g., Cameron, 2001; Cameron & Pierce, 2002; Dickinson, 1999).

Meta-analytic reviews of experimental studies on rewards and intrinsic motivation have identified conditions under which rewards can be used to produce negative or positive effects on intrinsic motivation (e.g., Cameron, Banko, & Pierce, 2001; Deci et al., 1999). Negative effects were found in studies where rewards were given without any regard for the student's performance. Positive effects were found when individuals were rewarded for low interest tasks and / or for exceeding an absolute standard (achieving a specific score) or surpassing a normative standard (performing better than other students) on high interest tasks. Recent experiments (e.g. Pierce, Cameron, Banko, & So, 2003; Cameron, Pierce, & So, 2004) have also shown that students' performance and motivation increase when rewards are tied to achieving increasingly challenging standards (mastery). The use of praise has also been found to show positive effects on performance and motivation.

There has been little direct research on the development of effective incentive programs for improving students' reading. However, based on findings from reviews and metanalyses on the effects of rewards on performance and motivation, Gear et al. (2004) proposed criteria for setting up an effective incentive program in an educational setting. Gear et al. suggest that an effective incentive program (a) involves spontaneous praise, (b) rewards students immediately following successful performance, (c) distributes rewards for meeting clear performance standards, (d) gives rewards for increasingly challenging tasks, (e) uses rewards that students enjoy, and (f) phases out rewards as student performance increases. Importantly, rewards have been found to be effective at increasing intrinsic motivation and performance on tasks that are initially of low interest (Cameron et al., 2001). Not surprisingly, students who are struggling often see reading as a task that is uninteresting and not motivating. Thus, the use of praise and tangible rewards in such circumstances may be an effective way to establish motivation.

There have been some reading incentive programs that have been implemented in the United States and Canada in an attempt to increase reading motivation. Gear et al. (2004) reviewed seven reward-for-reading programs and found that most met some of the criteria they proposed. However, there was little documentation regarding the programs' overall effectiveness. Instead, most program evaluations were testimonials from teachers, parents, and students who claimed that the programs increase reading motivation. Gear et al. located a few surveys that examined attitudes toward these programs and determined that the surveys that have been conducted suggest that students who participate in the programs read more and have a positive attitude toward reading. Gambrell, Almasi, Xie, & Heland (1995) investigated a program entitled RUNNINGSTART where students are rewarded with bookmarks, stickers, books, and other recognition items for reading 21 books in 8-10 weeks. The authors determined that participation in the program increased reading motivation and the reading behaviours of the children and parents that participated in the program. There were also long-term positive effects for both children and parents that continued on to the next year. Flora and Flora (1999) investigated college students who had participated in a reading incentive program when they were in elementary school. They found that participating in a reading reward program did not harm intrinsic motivation to read. Flora and Flora also found that offering extrinsic rewards for reading helped to set the conditions whereby intrinsic motivation was developed.

Overall, there has been a lot of negative publicity about the use of rewards in any educational program. Although specific research on reading for reward programs is limited, findings from experimental research and metanalytic results suggest that rewards can be useful in educational programs. In addition to examining how teachers view different types of reading programs, the present research assesses teachers' perceptions about the use of rewards in reading programs.

Theoretical Perspectives

The present studies are designed to examine why effective reading programs and rewards are not in wide use in educational settings. The hypothesis is that such programs are seen as controlling and take away from a student's freedom and autonomy. The research hypothesizes that in explicit, direct programs teachers attribute students' reading performance to external causes. This is even more pronounced when tangible rewards are used. It is further hypothesized that when external attributions are made, teachers will give the students less credit for their performance and infer lower intrinsic motivation. On the other hand, in meaning-based programs, teachers will attribute performance to internal causes and will view the students as deserving more credit and as more motivated. It is expected that these attributions and inferences lead teachers to view the student as feeling more positively or negatively. Ultimately, this influences teachers' choice of teaching strategies and may help to explain why effective reading programs and incentive systems are not widely adopted. The sources of these hypotheses for the current research are rooted in attribution theory, self-determination theory, and B.F. Skinner's views on freedom and dignity.

Attribution Theory

Attribution theory is concerned with the perceived causes of behaviour. That is, people are always searching to explain the cause of certain events. The current research is interested in teachers' attributions of the cause of reading performance in different types of reading programs. In particular, the importance of the distinction between internal attributions (when the cause of behaviour is due to something internal) and external attributions (when the cause of behaviour is due to something external to a person) in influencing perceptions of students will be examined.

Internal versus External Attributions

Traditional attribution theorists such as Heider (1958) and Kelley (1967) emphasized the importance of using a procedure similar to the scientific method to determine whether the cause of behaviour is due to an internal or external cause. In particular, when the perceiver has information from multiple sources, Kelley compared the attribution process to an analysis of variance (ANOVA) whereby each person analyses the covariation of the occurrence of the target event with the actor, the stimulus, and the time of the event. In order to make inferences about the source of causation, each person looks at the varying dimensions (low versus high) on three types of knowledge: consensus information, consistency information, and distinctiveness information. Consensus describes other people's behaviour to the stimulus; consistency describes the degree to which a person behaves towards a particular stimulus in the same manner across different situations; and distinctiveness describes the person's behaviour to other stimuli. According to Kelley, when these three sources of information combine into two distinct patterns, a clear attribution can be made regarding whether people attribute the behaviour to an internal or external cause.

Lepper, Greene, & Nisbett (1973) contended that when individuals observe another person engaging in an activity, they infer that the other person is intrinsically motivated to engage in that activity. However, if there are salient, ambiguous, and extrinsic reasons for that person's behaviour, the observer infers that the behaviour is due to an external factor. When one walks into the classroom and sees a child reading on his or her own, the observer would likely infer that the child is intrinsically motivated to read and would attribute the cause of the behaviour (reading) to something within the child. However, if the same person walked into a classroom and saw a teacher directly teaching students how to read words in a passage and directing the student to read the passage, the observer would likely infer that the reading behaviour was due to the teaching strategies, request of the teacher, or for recognition from the teacher (an external cause for the behaviour).

When both internal and external causes for a behaviour are present, the discounting principle may apply. Kelley (1973) described the discounting principle as the ability to diminish the perceived role of a given cause in producing an effect, if other plausible causes are present. That is, when there is a plausible and salient external cause and an uncertain internal cause of behaviour, older children and adults are more likely to discount the role of the internal cause compared to when it is the only possible cause. For example, if an observer visited a classroom one week after watching the reading lesson and saw a child reading, he or she would have two potential causes for behaviour (the explicit reading lesson and intrinsic motivation). Since there are two potential causes for behaviour, the observer may discount the role of intrinsic motivation in favour of the explicit, salient cause for the reading behaviour. This phenomenon has been described as the overjustification effect (Lepper et al., 1973) in the literature on the use of rewards in the classroom. Lepper et al. contend that if a child is tangibly rewarded for doing something that he or she find intrinsically interesting, such as playing with a toy, the child begins to attribute their behaviour to the reward and not to the fact that they like playing with the toy. According to the overjustification effect, the child will stop playing with the toy once the reward is removed because the child decided that he or she was playing with the toy for the reward, not because playing with the toy was fun.

Internal vs. External Attributions in the Classroom

In traditional attribution theories, people are attempting to determine whether the cause of an outcome has to do with something internal to the person or external to the person. In educational settings, effort and ability would be considered internal attributions as the cause of the behaviour or performance is attributed to something within the person. On the other hand, help from others, and environmental conditions, such as rewards for performance, are considered to be external attributions. The type of attributions that are made, whether internal or external, can have a significant influence on behaviour. For example, Georgiou (1999) found that parental attributions of achievement to the child's own effort was positively related to parents' attempts to develop the child's interests and negatively related to their pressing the child for better results at school. Frieze and Weiner (1971) found that students from low income families were more likely to attribute performance to external factors, which were thought to be associated with decreased expectancy of success and underachievement.

In general, when an internal attribution is made, the student is seen as being more intrinsically motivated. However, when an external attribution is given, it is assumed that the student is extrinsically motivated. These attributions impact the amount of credit given to the student for their performance. The current research tests whether or not the type of attributions teachers make (internal or external) impact their beliefs about students in different types of reading programs. It is hypothesized that teachers will make internal attributions about student performance when students are in a meaning-based reading program. On the other hand, it is hypothesized that teachers will make external attributions about student performance when there are clear, explicit teaching strategies and when rewards are given for reading performance.

Teacher Attributions

Clark and Peterson (1986) stated that the most important beliefs that teachers have about their students are those that deal with the teacher's perceptions of the causes of the student's behaviour. These beliefs, perceptions, attitudes, attributions, and expectations determine, to a large extent, teacher behaviour and teacher interaction patterns with students, particularly with students who are experiencing difficulty at school (Brophy, 1985). Teachers' attributions of reasons for student success and failure are important because they influence student attributions through teacher behaviour (Fennema, Peterson, Carpenter, & Lubinski, 1990), and attributions contribute to teachers' expectancies for future student behaviour (Clarkson & Leder, 1984; Peterson & Barger, 1985). The teacher's influence on the students' own attributions is important as O'Sullivan and Howe (1996) found that a students' reading achievement was related to their attributions about their own reading performance. That is, superior reading was demonstrated by students with more adaptive attributions (they emphasized the contribution of their own ability and liking for reading in determining good reading). Low achievers, on the other hand, stressed how variables external to themselves such as luck and help from home were instrumental to their performance. The current research is designed to investigate if teacher attributions towards students are affected by the type of instructional program that is used to teach reading and by the use of rewards.

Self-Determination Theory

Self determination theory (SDT) is a theory of human motivation that assumes that human beings are active organisms with innate tendencies toward psychological growth and development (Ryan & Deci, 2000). The theory focuses on individuals' opportunities to make choices or decisions about how to behave or think as precursors to their perceived control (Deci, 1975; Deci & Ryan, 1980). From the perspective of SDT, the social context is important; the social context can either support or thwart a person's natural tendencies toward engagement and growth. According to SDT, there are three basic psychological needs that are the basis for motivation to do any activity. Relatedness, competency, and autonomy are seen as the essential building blocks for motivation. Relatedness, in the classroom, has to do with a sense of belonging that is derived from relationships in the classroom. For example, students who come from a family that like to read are more likely to enjoy reading because reading is meaningful in their social environment. Competency refers to the students' feelings that they are capable of performing in the classroom. In the classroom, this implies that providing students with learning experiences that are not too easy, but not overly challenging is important. In the reading classroom, it would imply that students should be provided with books that are at a comfortable level for the student. Equally important, according to SDT, is the element of autonomy or freedom. Choice is central to freedom and autonomy. According to the theory, if students are allowed to choose what they read, their motivation is increased. Theoretically, their reading improves because they are interacting with the text and discussing what they have read with those around them (Sweet, 1997).

According to SDT, an autonomy orientation in the classroom, when compared to a controlling one, promotes a greater degree of students' intrinsic motivation, stronger beliefs about intellectual competence, and higher levels of self esteem (Deci, Schwartz, Sheinman, & Ryan, 1981; Grolnick & Ryan, 1987). Extending SDT theory, it follows that an observer would see students as feeling more autonomous, competent, and worthy in a setting that they view as autonomy-oriented. As well, SDT asserts that when students experience controlling behaviours used by others to reach a given standard, self- determination is reduced; consequently performance level decreases (Deci & Ryan, 1987; Ryan, 1982). An autonomy-oriented classroom is described as a classroom where children solve their own problems, children take more responsibility for their learning, and learning is self-regulated. These characteristics are consistent with descriptions of meaning-based reading programs. Overall, according to SDT, if individuals perceive themselves as being competent and they sense that they have control in a situation, they are more likely to be intrinsically motivated. If any of the needs (relatedness, competency or autonomy) are not present, the likelihood of the person being intrinsically motivated is lessened.

The benefits of an autonomy-oriented classroom have not been shown empirically. Garbarino (1975) found that students taught using controlling strategies solved fewer problems than those not exposed to these strategies. Deci et al. (1981) found that students subjected to teachers using controlling strategies solved more problems than students taught by teachers not using these strategies. Deci et al. also found that students who worked with non-controlling teachers solved more problems independently. Fink, Boggiano, & Barrett (1990) found that controlling strategies affected students' performance only when teachers were pressured. In fact, under conditions in which controlling strategies such as directives were used in the absence of pressure on students to perform well, students' performance showed a minor increment. It is important to note that research on SDT focuses on how student's perceive teaching strategies. The current research extends the view by looking at how SDT applies to teachers perceptions of instructional procedures.

In addition to looking at controlling versus autonomous settings, SDT has been applied to the use of rewards in classrooms. According to SDT, when students receive extrinsic rewards for completing a task, they feel that the reason that they participated in the task was because they were receiving a reward and not because they wanted to participate. The result is that the perceived autonomy of the individuals who receive a reward is undermined, thereby weakening their intrinsic motivation to participate in the task. Based on Cognitive Evaluation Theory (CET) (Deci & Ryan, 1985), a subtheory of SDT, the effects of a reward depend on the interpretation that a person gives to the reward. Rewards can be either informational (indicators of a person's competence) or controlling. That is, if a reward threatens a person's self-determination, it ultimately leads to an external perceived locus of causality, it is perceived as controlling, and it subsequently undermines intrinsic motivation. Rewards can have a positive effect when they provide information to a person. This informational aspect of reward can provide satisfaction of a person's need for competence. In this case, rewards may be perceived as indicators of a person's competence and, therefore, less damaging to their intrinsic motivation. According to CET, rewards based on meeting performance standards will be experienced as the most controlling.

Eisenberger et al. (1999) reviewed five studies that measured the effects of rewards on autonomy and intrinsic motivation. They found that rewards increased perceptions of autonomy and intrinsic motivation. Eisenberger et al. concluded that rewards based on performance increase perceived self-determination by conveying freedom of action to the participant, not control over performance. Eisenberger et al. (1999) tested this conclusion and found that performance-contingent rewards increased perceived self-determination. In addition, they found that feelings of self-determination mediated the impact of rewards on intrinsic motivation.

In an attempt to rectify the difference between the hypotheses made by SDT / CET and the research findings, Houlfort, Koestner, Joussemet, Nantel-Vivier, and Lekes (2002) suggested that the studies cited previously only focused on decisional autonomy. Decisional autonomy refers to one's opportunity to make choices. Houlfort et al. contended that the studies did not deal with affective autonomy or the feeling of being free and relaxed versus feeling coerced. In other words, rewards may enhance decisional autonomy, but people may still feel coerced. Houlfort et al. conducted two studies to assess the effects of performance-based rewards on affective autonomy, decisional autonomy, and intrinsic motivation. They found that rewards had a negative effect on affective autonomy and did not impact on decisional autonomy. However, measures of affective autonomy were not correlated with measures of intrinsic motivation. In sum, the relationships between rewards, affective autonomy, decisional autonomy, and intrinsic motivation remain unclear at this time. It is possible that even though students do not feel less self-determined, observers (teachers) may infer less self-determination and, therefore, infer less intrinsic motivation.

Skinner's Views as Expressed in Beyond Freedom and Dignity

The distinction between humanist and behaviourist notions of education are important to the present research. A classic debate involving Skinner highlights these differences. Skinner, supporting his behaviourist views of education, and Rogers, supporting humanist views of education, ultimately agreed on the goal of education, but disagreed on how to get there. According to humanist notions of education, learning is best conducted in unstructured settings, with little interference from teachers. Students are free to choose their path to knowledge. Rogers (1979) emphasized freedom and independence as central to learning. Skinner agreed that the goal of education was to have students become independent learners. However, he argued that students do not feel free or enjoy learning unless they are in an environment (classroom) that is designed to positively reinforce their learning. In fact, Skinner contended that structured classrooms and planned interventions, such as those used in direct teaching programs, are necessary for successful learning.

Skinner provided an account of freedom and purpose in the classroom using behavioral terms. His views were presented in his book *Beyond Freedom and Dignity* (1971). Skinner disagreed with the notion that there was such a thing as an autonomous human. Skinner argued that the role of the environment in shaping behaviour needed to be acknowledged. In fact, although most people in Western society see control as a negative feature, Skinner argued that control is not always aversive and that many social practices involve the control of one person by another. In addition, Skinner contended that, although freedom is highly valued, it is through conditioning and reinforcement that society begins to accept concepts such as freedom, tangible, and attainable. *Beyond Freedom and Dignity* presents several ideas that can be tested as hypotheses.

Skinner suggests that when there is evidence that a person's behaviour may be attributed to external circumstances, the person's sense of dignity or worth is threatened (p. 41). This suggestion is related to attribution theory in that external attributions of achievement are seen as negative. When behaviour is attributed to external causes, the actor is viewed as more controlled and less autonomous. In addition, Skinner proposed that the credit that we give people is inversely proportional to the conspicuousness or obviousness of the cause of that behaviour (p. 42). Therefore, we tend to give credit generously when there are no obvious reasons for the behaviour. When there are no obvious reasons for a behaviour, most motivation theorists would contend that the behaviour is intrinsically motivated. For example, if a child comes to school and reads a complex book to his or her teacher, the teacher would give the child a lot of credit for the progress that had been made. On the other hand, if the teacher knew that the student's parents were working with him or her every night and were rewarding the child for progress, the teacher would give the student less credit. Although Skinner's ideas have not been readily tested experimentally, the present research attempts to examine the hypotheses in an educational framework.

The Present Research: Hypotheses and Predictions

The present research is designed to determine the influences that different instructional procedures (use of explicit direct teaching methods vs. meaning-based programs, use of rewards) have on teachers' perceptions of students. Hypotheses that have arisen from the theoretical perspectives examined previously are explored. In order to test the hypotheses, three studies have been conducted. Pre-service or practicing teachers were given a scenario that described a remedial reading program for a grade two student who had not developed any reading skills even though she was of average intelligence. The scenarios varied in terms of the type of instructional program used (direct or meaning-based), type of reward given (token or praise) and whether or not the student needed to reach a performance standard to receive the reward. Participants in the studies read one of the scenarios followed by a questionnaire that was designed to assess the teachers' perceptions of the program and the reward procedures. Specifically, the questionnaire investigated perceptions of the explicitness of the procedures, how controlling the teachers view the strategies, the teachers' judgments of how the instructional procedures in the scenario made the student feel, how much credit they would give to the student, whether they attribute the student's performance to internal or external factors, and how motivated the teachers believe that the student is in the program and in the future.

Based on the theoretical perspectives discussed in this chapter, a number of specific predictions can be made about the effects different teaching procedures and reward procedures have on teacher perceptions. Attribution theory predicts that, when students participate in reading programs that involve direct, explicit procedures, teachers attribute student performance to external factors. On the other hand, teachers attribute student performance to internal causes when instructional procedures to teach reading are more obscure such as in meaning-based programs. As well, the use of tangible rewards will lead teachers to make more external attributions than when students are praised for their performance.

According to self-determination theory (SDT), when instructional methods are explicit, as in direct methods of teaching reading, teachers will view the program as controlling. Tangible rewards will also be regarded as controlling. In turn, teachers will infer that students in such programs will feel less autonomous, less competent, and less intrinsically motivated than students in classrooms that would be considered by SDT theorists as autonomy-oriented. Classrooms that use meaning-based programs to teach reading are more in line with definitions of autonomy-oriented classrooms. According to SDT theory, students will perform better when they are in classrooms that are perceived to be less controlling. SDT theory also contends that, although praise may be seen as somewhat controlling, people will not perceive the use of praise to be as controlling as the use of tangible rewards.

Based on B.F. Skinner's views expressed in *Beyond Freedom and Dignity*, teachers will attribute performance to external causes in programs that use direct, explicit teaching procedures and tangible rewards as there is an obvious cause for the students' performance. Students will also be viewed as less autonomous. In turn, teachers will give less credit to students under these conditions. Teachers will also perceive the students' self worth as threatened in these types of programs. Conversely, when there are less obvious reasons for behaviour, such as when teachers use meaning-based teaching procedures and / or praise, teachers will attribute performance to internal causes, see the student as more autonomous, give more credit to the student and infer that the student is more worthy of their accomplishments.

Practical Implications

This research has important implications for educational practice, particularly in the area of reading instruction. Most importantly, the results of the current research provides guidance in determining the components of effective reading programs that may be more widely used by educators. That is, if programs have less conspicuous or obvious contingencies, they may have a better chance of being implemented into schools. As well, the research could provide further insight into the emotional and behavioral reactions teachers have about students who are only reading under structured settings or when students require incentives in order to read. A better understanding of this dynamic will provide useful information when working with struggling students. This research may also inform instructors in education programs about teachers' perceptions of reading instructional procedures. That is, teachers need to be aware of the instructional practices that have been found to be most effective in teaching reading. It is also important to note that, although this research uses teaching reading as a context, the findings could be used to gain insight into teaching any curriculum area when faced with deciding whether or not to teach concepts using direct or indirect teaching approaches.

Chapter 3

Study 1

Overview

The purpose of this study was to examine pre-service teachers' perceptions of programs that use direct teaching methods versus meaning-based methods to teach reading. The research also investigated teachers' perceptions of the use of incentives in educational programs. For Study 1, three scenarios were developed. One scenario describes a reading program that utilizes direct, explicit teaching procedures to teach reading. As well, a token reward is given to the student described in the scenario for meeting a specific performance standard. In the second scenario, the same direct teaching procedures are described. However, in this scenario, the student in the program receives verbal praise for reading, instead of a token reward. In addition, the praise is not contingent on the student's performance. The third scenario involves the student in a remedial reading program that is based on a whole language or meaning-based instructional method to teach reading. The student in the third scenario is praised for reading, but the praise is not contingent on the student's performance.

Pre-service teachers read one of the scenarios followed by a questionnaire that was designed to assess perceptions of the instructional and the reward procedures. Specifically, the questionnaire investigated perceptions of the explicitness of the procedures, how controlling the participants viewed the strategies, perceptions of how the instructional procedures in the scenario made the student feel, how much credit participants would give to the student, whether they attributed the student's performance to internal or external factors, and how motivated participants believed that the student is in the program and in the future.

One goal of Study 1 was to identify problems in the scenarios and/or the questionnaire. Based on an analysis of the results, the scenarios and questionnaire were revised for the second and third studies that were conducted with pre-service teachers who had practicum experience and practicing teachers.

Participants

Participants (N=142) were volunteers in an education course (EDPY 301) at a major University in Western Canada. ED PY 301 is a third-year education course titled Inclusive Education: Adapting for Students with Special Needs that all education students are required to take. Generally students in this course have taken introductory arts and science courses and are beginning their education coursework. These students usually have not had any practicum experience and are taking several other education courses along with Ed Py 301. The class was made up of approximately 175 students.

One hundred forty nine students volunteered for the study and were given one of three scenarios to read. Five multiple choice questions followed the readings; these questions were designed to assess whether the students correctly read the scenario (manipulation check). Seven participants did not answer the manipulation check questions correctly and were omitted from the study. The final sample was made up of 142 participants (47 read the direct instruction token scenario, 58 read the direct instruction praise scenario, and 37 read the meaning-based praise scenario). Overall, on average, participants had taken eight (7.92) courses in education (SD = 2.88).

Procedure

Four graduate students administered the study in the classroom. One researcher explained the purpose of the study. The researcher told participants that the research project was designed to investigate pre-service teachers' perceptions of reading programs. They were told that they would be asked to read a vignette about a grade 2 student in a reading program and that they would be asked to complete a questionnaire based on the vignette they read. Participants were asked not to discuss any of the vignettes or questionnaires. They were also informed that participation in the study was strictly voluntary and that they were free to withdraw at any time. The participants were also informed that the plan for this study had been approved by the Research Ethics Board. Students who chose to participate signed an informed consent form (see Appendix A).

The scenarios and questionnaires had been previously shuffled and were randomly distributed to participants. The three scenarios described one of the three remedial classrooms described previously. Each scenario described a grade 2 student, Jennifer, who was enrolled in a remedial reading program because she had not developed any reading skills after completing grade 1. Each program described in the scenarios involved a teacher and teacher assistant to carry out the program. The teacher in the program instructed the whole class, while the teacher assistant was involved in reading individually with the student described in the scenario. The direct instruction token scenario described a program that used direct teaching procedures and a token reward when Jennifer reached a performance standard. Rewards were exchangeable for computer time, stickers, and pencils etc. listed in a catalogue. The direct instruction praise scenario also described a program that used direct teaching procedures, but Jennifer was praised, instead of receiving a token reward, for reaching a performance standard. In the meaning-based praise scenario, the student described in the scenario, Jennifer, was enrolled in a meaning-based program and was rewarded with praise for reading; Jennifer did not need to meet a performance standard to receive the reward. The three different scenarios are presented in Appendix B.

Participants were asked to read the scenarios and fill out a questionnaire (see Appendix C). As noted, the first five questions served as a manipulation check and tested whether the participants had read the scenarios. The questionnaire was designed to assess participants' perceptions of the teaching and reward procedures presented in the scenarios, inferences about how participants thought the student in the vignette felt, internal and external attributions of the student's performance, inferences about how competent and motivated they thought the student would be, and how much credit should be given to the student in the scenario. When participants had completed the questionnaire, they handed it in to one of the graduate student researchers.

Participants were then given a written debriefing that described the overall purpose of the research, the three scenarios that were presented, and the variables that I was interested in (see Appendix D).

Dependent Measures

Perceptions of teaching and reward procedures. Six bipolar items (clear/vague, explicit/ambiguous, subtle/obvious, unnoticeable/visible, glaring/hidden, conspicuous/inconspicuous) were used to assess how explicit or obvious the participants perceived the teaching procedures portrayed in the vignettes. Each item was measured on a 7-point scale and later coded as 3, 2, 1, 0, -1, -2, -3. For each descriptor in the pair, the positive adjective was coded with positive numbers and the negative adjective was coded with negative numbers. For example, for the item "clear/vague", clear was coded positive, vague was coded negative. The ratings given by participants on these six items were summed and divided by 6 to create a composite measure of explicitness of the teaching procedures. Reliability of the explicitness scale was alpha = 0.77. Three bipolar items were designed to assess whether participants viewed the teaching program as autonomy-supportive or controlling (controlling/self-initiating, authoritative/flexible, coercive/unconstraining); the reliability of the autonomy-supportive scale was alpha = 0.80. One item measured how motivating participants rated the teaching procedures (motivating/discouraging) and one item measured how fair the participants rated the teaching procedures. The same bipolar items were used to assess how participants viewed the reward procedures portrayed in the scenarios.

Inferences about how the student in the scenario felt during the program. Fifteen bipolar items were designed to assess the participants' judgments of how the instructional program made the student (Jennifer) feel. Each item was measured on a 7-point scale and coded from 3 to -3. Three items made up the perceived sense of competence scale (Jennifer felt competent/incompetent, capable/unable, confident/unsure), alpha = .89; five items made up the perceived feelings of autonomy scale (Jennifer felt calm/anxious, at ease/intimidated, free/constrained, easy-going/overwhelmed, relaxed/nervous), alpha = .92; three items made up the perceived sense of self-worth scale (Jennifer felt deserving/unworthy, valuable/worthless, proud/humble), alpha = .82; the perceived feelings of value scale consisted of two items (Jennifer felt good/bad, positive/negative), alpha = .87; and the perceived sense of motivation scale consisted of two items (Jennifer felt interested/bored, motivated/inspired), alpha = .85.

Attributions of Jennifer's performance. Eight items on a 7-point Likert scale were used to assess attributions about the student's (Jennifer's) in the scenario poor grade 1 reading performance. External factors (her parents, her grade 1 teacher, the school curriculum, the reading program used, the school system, the school administration) were combined into a composite measure. The reliability alpha of this composite was .81. Internal factors (Jennifer's abilities, her intelligence) were also combined into a composite measure with a reliability alpha of .57.

Eleven Likert items were used to assess degree which Jennifer's success (or failure) in the remedial reading program was due to external factors (help from TA, situation pressure, feedback from TA, rewards from TA, luck, reading program used) or internal factors (her effort, her abilities, her motivation, her interest, her intelligence). The external and internal items were combined into composite measures with reliabilities of .54 and .65 respectively. In addition, participants were asked to rate the degree to which Jennifer's future reading performance will be due to internal factors (her effort, her abilities, her motivation, her interest, her intelligence) and external factors (help from TA, feedback from TA, rewards from TA, luck). The reliability alpha for the internal composite was .78 and the reliability for the external composite was .64.

Single Likert items. Ten single 7-point Likert items (1=not at all to 7=very much) were used to measure perceptions of amount of credit that should be given to Jennifer (i.e. Jennifer deserves credit for accomplishments in the program.), how controlling the procedures were (i.e. Jennifer felt controlled during the program.), Jennifer's motivation in the program (i.e. Jennifer is motivated to read.), Jennifer's reading competence (i.e. How poorly (or well) do you think Jennifer will be reading in 12 weeks?), autonomy (i.e. Jennifer's reading performance is self-determined.), and the explicitness of the procedures (i.e. There are explicit incentives for Jennifer to read.). These items were analyzed individually.

Attribution of credit. Perceptions of the amount of credit that should be given to Jennifer, her teacher, and the teacher assistant in the classroom were also measured using the following item: Imagine you had 100 dollars to give out based on the credit that is deserved for Jennifer's performance. How much would you give to Jennifer, Jennifer's teacher, the teacher assistant? Participants were asked to write in numbers that added to 100.

Likelihood items. Seven probability items asked participants to determine the likelihood, from 0 to 100 percent, of certain events. Two items were combined to create a performance scale (Jennifer will read without errors, will read at grade level), reliability alpha = .67; two items made up the success of program scale (the program will result in improving her reading, Jennifer will need to be in a remedial program next year (reverse scored), reliability alpha = .80; and two items made up the motivation scale (Jennifer will read for fun in the summer, will become an avid reader), reliability alpha = .87. One item measured the likelihood that the reward procedures would result in Jennifer improving her reading.

Intrinsic motivation. Four items (During her summer holidays Jennifer will read everyday, read during her free time, be motivated to read, and will enjoy reading) on 7-point Likert scales measured Jennifer's future motivation to read. These items were combined into a composite scale called intrinsic motivation that had a reliability alpha of .94.

Data analysis

Items from each section of the questionnaire were combined to make various scales. One-way ANOVA was used to analyze differences between groups with post hoc Bonferroni comparison tests to determine which groups differed significantly from each other. Not all participants answered all questions; thus, the degrees of freedom and sample size vary for different analyses.

Results

Perceptions of teaching procedures

Each of the four scales (Explict, Autonomy-Supportive, Motivating, and Fairness) was analyzed with one-way analysis of variance (ANOVA); scenario type (meaning-based/praise, direct instruction/praise, and direct instruction/token) was the between groups factor.

ANOVAs on the four measures indicated statistically significant effects on the explicit scale, $F(2,133) = 18.03, p < .001$; the autonomy-supportive scale, $F(2,138) = 44.44, p < .001$; and the motivating item, $F(2,138) = 5.84, p = .004$. On the Fair item, ANOVA indicated a marginally significant effect, $F(2,139) = 2.52, p = .08$. Bonferroni post hoc comparisons showed that participants who read the meaning-based praise scenario rated the teaching procedures as significantly less explicit ($p < .001$), autonomy-supportive ($p < .001$), and motivating ($p < .01$) than participants who read either of the direct instruction praise ($d = 0.99$, $d = 1.71$, $d = 0.68$, respectively) and direct instruction token ($d = 1.79$, $d = 1.80$, $d = 0.71$, respectively). There were no significant differences on any of the measures between participants who read the direct instruction praise scenario and those who read the direct instruction token scenario.

Means and standard deviations for the three groups on measures of how explicit, autonomy-supportive, motivating, and fair they rated the teaching procedures are presented in Table 3.1.

Table 3.1 indicates which groups differed significantly on the post hoc Bonferroni tests. Overall, Table 3.1 shows that the means became progressively lower on the Autonomy-supportive, Motivating, and Fair scales when participants read the meaning-based praise, direct instruction praise, and direct instruction token scenarios. Conversely, means became progressively higher on the explicit scale.

The participants' ratings of the teaching procedures are also presented in Figure 3.1. An inspection of Figure 3.1 indicates that participants rated direct teaching procedures negatively on the Autonomy-supportive scale, while ratings on the Autonomy-supportive scale were positive when participants read the meaning-based scenario. Figure 3.1 also shows that participants who read the meaning-based scenario rated the teaching procedures as more motivating and fair, and less explicit than participants who read the direct instruction token and direct instruction praise scenarios.

Perceptions of reward procedures

The same bipolar items used to assess the participants' perceptions of the teaching procedures were used to evaluate whether participants viewed the reward procedures portrayed in the vignettes as explicit, autonomy-supportive, motivating, and fair. One way ANOVAs revealed a significant effect on the Explicit scale, $F(2,133) = 31.26, p < .001$; the Autonomy-supportive scale, $F(2,138) = 49.25, p < .001$; the Motivation item, $F(2,138) = 5.63, p = .004$; and the Fair item, $F(2,138) = 11.22, p < .001$.

The means and standard deviations for participants' ratings of the reward procedure presented in the vignettes on each of the scales are presented in Table 3.2. Table 3.2 shows that, in terms of how explicit, autonomy-supportive, and fair participants perceived the reward procedures to be, all three groups differed significantly from each other. Participants who read the meaning-based praise scenario rated the reward procedures as less explicit, but more autonomy-supportive and fairer than participants who read the direct instruction praise scenario ($p = .007$, $d = 0.60$; $p < .001$, $d = 1.04$; $p = .043$, $d = 0.55$, respectively) and than participants who read the direct instruction-token scenario ($p < .001$, $d = 1.79$; $p < .001$, $d = 2.34$; $p < .001$, $d = 0.83$, respectively). Participants who read the direct instruction praise vignette rated the reward procedures as less explicit ($p < .001$, $d = 1.18$), more autonomy supportive ($p < .001$, $d = 0.93$), and fairer ($p = .03$, $d = 0.49$) than those who read the direct instruction with token reward vignette. On the motivating item, the meaning-based praise participants differed significantly from those in the direct instruction token group ($p = .003$, $d = 0.78$); the direct instruction praise group did not differ significantly from either the meaning-based praise group or the direct instruction with token reward group.

Participants rated the reward procedures in the meaning-based program as the least explicit but the most autonomy-supportive, motivating and fair; participants rated the direct instruction with token rewards as the most explicit but the least autonomy supportive, motivating and fair.

Inferences about how the reading program made the student (Jennifer) feel

ANOVAs on the five scales indicated statistically significant effects on the Competence scale, $F(2,135) = 20.48, p < .001$; the Autonomy scale, $F(2,134) = 48.79, p < .001$; the Self-worth scale, $F(2,134) = 17.82, p < .001$; the Well-being scale, $F(2,134) = 23.93, p < .001$; and Motivation scale $F(2,137) = 22.08, p < .001$.

The means and standard deviations for participants' inferences about how the program made the student (Jennifer) feel in the scenarios on each of the scales is presented in Table 3.3.

In terms of participants' inferences about the student's feelings of autonomy and well-being, Table 3.3 indicated that all three groups differed significantly from each other. Participants who read the meaning-based praise scenario perceived the student described in the scenario as feeling more autonomous and as having more positive feelings of well-being than participants who read the direct instruction praise scenario ($p < .001$, $d = 1.66$; $p < .001$, $d = 1.12$ respectively) and than participants who read the direct instruction token scenario ($p < .001$, $d = 1.67$; $p < .001$, $d = 1.50$ respectively). Participants who read the direct instruction praise vignette rated the student as feeling more autonomous ($p = .028$, $d = 0.50$) and having more positive feelings about their own well-being ($p = .015$, $d = 0.53$) than those who read the direct instruction with token reward vignette. On the Competence, Self-Worth, and Motivation scales, the meaning-based praise participants differed significantly from those in the direct instruction token ($p < .001$, $d = 1.41$; $p < .001$, $d = 1.29$; $p < .001$, $d = 1.49$ respectively) and than the participants who read the direct instruction praise scenario ($p < .001$, $d = 1.06$; $p < .001$, $d = 1.14$; $p < .001$, $d = 1.31$, respectively). Participants in the meaning-based praise group, rated the student in the scenario as feeling more competent, more worthy, and more motivated than participants in the direct instruction praise and direct instruction token groups. On these three scales, the direct instruction praise group did not differ significantly from the direct instruction with token reward group.

Participants' ratings of how they thought that the student in the scenario would feel during the reading program are also presented in Figure 3.2.

Figure 3.2 shows that participants rated the student in the program as feeling more competent, autonomous, worthy, good about themselves, and motivated than participants in the direct instruction praise and direct instruction token groups. In particular, participants perceived the student's feeling of autonomy negatively when they read either of the direct instruction scenarios. Perceptions of autonomy were significantly more negative when participants read the direct instruction scenario that involved a token reward. On the other hand, participants who read the meaning-based scenario rated the student's feelings of autonomy positively.

Attributions of performance

Attributions of Jennifer's grade 1 reading performance. An ANOVA indicated a statistically significant effect on the External Factor composite, $F(2,129) = 3.53, p = .032$. An ANOVA on the Internal Factors composite, $F(2,130) = .186$, n.s., was not significant.

The means and standard deviations for participants' attributions of Jennifer's grade 1 reading performance are presented in Table 3.4. Inspection of Table 3.4 shows that for all the groups on external factors, the means are right around the mid-point (or below) of 4 on a 7-point scale. This indicates that none of the groups are attributing the student's performance to external factors. However, participants who read the meaning-based scenario attributed Jennifer's grade 1 performance to external factors less than the direct instruction token group ($p = .043$, $d = 0.57$). For internal factors, all participants also chose ratings around the mid-point of 4; there were no significant differences between any of the groups. However, it is important to note that a difference would not be expected on attributions of Jennifer's grade 1 performance since all three scenarios presented the same information about Jennifer's grade 1 performance.

Attributions about Jennifer's performance during the remedial reading program. ANOVAs on the two composite measures indicated non-significant effects on the External Factors composite, $F(2,138) = .54$. However, an ANOVA on the Internal Factors composite was statistically significant, $F(2,138) = 3.85$, $p = .024$.

The means and standard deviations for participants' attributions of Jennifer's success or failure in the remedial reading program are presented in Table 3.5. Table 3.5 shows that participants were not attributing performance to external factors in any group as the means are right around the mid-point (4) on the 7-point scale. However, participants who read the meaning-based praise scenario attributed performance to internal factors more than participants who read the direct instruction token scenario ($p = .024$). Participants who read the direct instruction praise scenario did not differ significantly from participants who read the meaning-based praise or direct instruction token scenarios when making attributions to internal factors.

Attributions about the student's future performance (grade 3). An ANOVA on the External composite measure indicated a non-significant effect, $F(2,133) = .54$, n.s.. An ANOVA on the Internal Factors composite was statistically significant, $F(2,132) = 8.39$, $p < .001$.

The means and standard deviations for participants' attributions of Jennifer's future performance are presented in Table 3.6. Table 3.6 indicates that participants given the direct instruction token vignette attributed Jennifer's future performance less to internal factors than participants who read the direct instruction praise ($p = .001$, $d = 0.75$) scenario and than participants who read the meaning-based praise ($p = .004$, $d = 0.67$) scenario. Participants in the meaning-based praise and direct instruction praise groups did not differ when making attributions to internal factors. Participants in the praise groups (meaning-based and direct instruction) attributed

Jennifer's future reading performance more to internal factors than participants in the direct instruction token condition. Consistent with the other two attribution measures, participants did not attribute future performance to external factors.

Single Likert Items

Ten single Likert items were also analyzed. Because there were ten items that were tested, the level of significance was changed from .05 to .005 for each test, using a Bonferroni correction (Shaffer, 1995). Table 3.7 shows that seven of the ten items were statistically significant using the corrected alpha.

The means and standard deviations for participants' responses to single Likert items measuring control, credit, motivation, performance, autonomy in the program, explicitness of the teaching procedures, and future competence are also presented in Table 3.7.

In terms of participants' inferences about how controlled Jennifer felt and the degree to which her performance was self-determined, Table 3.7 shows that all three groups differed significantly from each other. Participants who read the meaning-based praise scenario perceived Jennifer as feeling less controlled and rated Jennifer's performance as more self-determined than participants who read the direct instruction praise scenario ($p < .001$, $d = 1.81$; $p < .024$, $d = 0.57$respectively) and than participants who read the direct instruction token scenario ($p < .001$, $d = 1.60$; $p < .001$, $d = 1.06$, respectively).

Participants who read the direct instruction praise vignette rated the student as feeling les controlled ($p = .037$, $d = 0.51$) and her performance as more self-determined ($p = .025$, $d = 0.54$) than those who read the direct instruction token vignette. Participants who read the direct instruction token scenario rated the incentives to read as significantly more explicit than participants who read the meaning-based praise ($p < .001$, $d = 1.66$) and direct instruction praise ($p < .001$, $d = 1.43$) scenarios. There were no differences in perceptions of the explicitness of incentives between those who read the scenarios that used praise (meaning-based and direct instruction). Participants who read the meaning-based praise scenario rated the student as more motivated to read, having higher self-worth, having more positive future feelings of reading competence, and as having more choice than participants who read the direct instruction token ($p < .001$, $d = 1.42$; $p < .001$, $d = 1.01$; $p < .001$, $d = 1.16$; $p < .001$, $d = 0.78$, respectively) and direct instruction praise ($p < .001$, $d = 1.01$; $p = .024$, $d = 0.53$; $p = .010$, $d = 0.66$; $p < .001$, $d = 0.91$, respectively) scenarios. There were no differences between participants who read the direct instruction praise and direct instruction token scenarios on these measures. As well, there were no differences in perceptions of Jennifer's ability to read after the 12 week program or the amount of credit that the teacher assistant should receive between the three scenarios.

Table 3.7 indicates that the Likert items confirmed results from the bipolar items. That is, Jennifer was viewed as less autonomous and less motivated in direct instruction programs, particularly those that used token rewards. The item measuring credit is marginally significant suggesting that better measures or different types of measures are needed.

Attribution of credit (money question)

ANOVAs on the amount of money given to Jennifer $F(2,137) = .241$, n.s., her teacher $F(2,137) = .246$, n.s., and the teaching assistant $F(2,137) = .966$, n.s., were all non-significant.

Means and standard deviations for the amount of money assigned are presented in Table 3.8. Generally, participants thought that Jennifer deserved $55, her teacher deserved $25, and the teaching assistant deserved $20 out of $100.

Likelihood items

ANOVAs on the four measures indicated statistically significant effects on the performance scale, $F(2,139) = 3.79, p = .025$; the success of program scale, $F(2,139) = 4.47$, $\mathrm{p} = .013$; the reward procedures item, $F(2,139) = 6.13, p = .003$, and the motivation scale, $F(2,137) = 26.95, p < .001$.

Means and standard deviations for the four groups on measures of perceptions' of the likelihood of improved performance, success of the reading program, success of reward procedures, and increased motivation are presented in Table 3.9. An examination of Table 3.9 indicates that participants that read the direct instruction praise scenario rated the likelihood of improved performance as statistically higher than participants who read the meaning-based praise ($p = .021$) scenario. When the findings from the two direct programs (token and praise) were combined and compared with the meaning-based program, the results also showed a significant effect, $t(138) = 2.58, p = .01$. Participants who read the direct scenarios (token or praise) rated the likelihood of improved performance higher ($M = 48.74$, *SD* = 16.61) than participants who read the meaning-based praise scenario (*M* = 40.27, *SD* = 18.41, *d* = 0.50).

There were no differences between the three groups on the likelihood that the program presented in the scenarios would be successful. Participants who read the direct instruction token scenario rated the likelihood that the reward procedures would increase performance significantly lower than participants who read the direct instruction praise ($p = .005$, $d = 0.19$) and than participants who read the meaning-based praise scenario ($p = .016$, $d = 0.37$). There were no differences between ratings of participants who read the meaning-based praise and direct instruction praise scenario on this measure. On the Motivation scale, participants who read the meaning-based praise scenario rated the likelihood that Jennifer would be motivated to read as significantly higher than those who read the direct instruction praise ($p = .003$, $d = 0.77$) and than those who read the direct instruction token ($p < .001$, $d = 1.60$) scenarios. Participants who read the direct instruction praise scenario rated the likelihood of increased motivation significantly higher than those who read the direct instruction token ($p < .001$, $d = 0.85$) scenario.

Intrinsic motivation

An ANOVA of the composite scale of Intrinsic Motivation indicated that there was a statistically significant effect, $F(2,133) = 25.93$, $p < .001$. Post hoc comparisons revealed that participants in the meaning- based praise group rated Jennifer as significantly more intrinsically motivated ($M = 4.37$, $SD = .90$) than the direct praise group ($M = 3.38$, $SD = 1.13$, $p < .001$, $d = 1.65$) and than the direct token group ($M = 2.59$, $SD = 1.23$, $p < .001$, $d = 0.68$). Participants in the direct praise group also rated the Jennifer's intrinsic motivation as higher than the direct token group (*p* = .002).

Discussion

Results from Study 1 indicated that pre-service teachers who read the meaning-based scenario rated the program as less explicit and more autonomy-supportive than those assigned to the direct instruction group. Participants also inferred that the student in the direct program felt less competent, autonomous, worthy, positive, and motivated than participants who read about a meaning-based program. These responses were augmented when the program included the use of tangible rewards.

Participants in the meaning-based treatment attributed the student's performance more to internal factors and gave more credit to the student than those in the direct instruction condition. In addition, pre-service teachers assigned to the meaning-based description viewed the student as more self-determined and intrinsically motivated than those given the vignette about the direct reading program. Remarkably, at the same time that participants viewed the student as feeling more competent, autonomous, and motivated in a meaning-based program, they were aware that the student had a better chance of improved performance in a direct instruction program (with token reward or praise).

The first study sought to test theoretical hypotheses based on attribution theory, self-determination theory, and Skinner's behavioral theory. Some of the hypotheses were supported while others were not. According to attribution theory, observers, such as participants in this study, should attribute performance to internal factors rather than external factors when there are not explicit external causes for behaviour. The meaning-based praise scenario does not include explicit external causes for behaviour and the results support this by showing that participants viewed direct teaching procedures as significantly more explicit. Therefore, it was expected that observers would attribute behaviour, in this case reading, to internal causes. This is partially supported by the results; participants who read the meaning-based praise scenario attributed reading performance to internal factors more than participants who read the direct instruction token scenario. However, it was also expected than when there are clear external causes for behaviour, such as explicit teaching procedures and token rewards, observers would attribute behaviour more to external factors. This hypothesis was not supported by the data.

There are several possibilities for these results. It may be that the measures are weak and need to be revised. As well, more attributional items need to be added to the questionnaire. In addition, it may be necessary to use forced choice measures that eliminate the middle value on the Likert scale to force participants to make either internal or external attributions.

According to self determination theory (SDT), when instructional methods are explicit, teachers (or pre-service teachers) will view the program as controlling. Tangible rewards will also be seen as controlling. This study provides support for this hypothesis. Direct teaching procedures were rated as more controlling than meaning-based procedures; token rewards were rated as more controlling than praise. In turn, it was hypothesized, based on SDT, that when teaching and reward procedures are viewed as controlling, participants would infer that the student in the programs will feel less autonomous, less competent, less intrinsically motivated, and less self-determined. This hypothesis was also confirmed in the present study. However, SDT would predict that a student would perform better in a classroom that is less controlling and more autonomy supportive. Findings from this study suggest that there was no difference in perceptions of performance and on one measure participants rated the likelihood of improved student performance as significantly higher in a direct teaching program.

Based on Skinner (1971), it was hypothesized that participants would give less credit to the student in the program that used direct, explicit teaching procedures and tangible rewards as there is an obvious cause for the student's performance. Although the measure of credit was marginally significant, this hypothesis was not confirmed. An examination of other ways to measure credit was done prior to conducting Study 2. It was also hypothesized, based on Skinner's views, that participants would perceive the student's self worth as threatened in a program with explicit contingencies. This finding was supported as participants perceived the student's self-worth as less in programs that used direct, explicit teaching procedures.

Overall, the first stage of the research provides some interesting insights into why reading programs that use explicit, direct teaching procedures and tangible rewards are not widely used. Although reading research suggests that students make the most progress in reading programs that use explicit teaching procedures, it appears as though pre-service teachers, who will soon be practicing teachers, view these programs as controlling and taking away from a student's intrinsic motivation and feelings of self-worth, autonomy, and competence. This is an interesting finding because reading research has found that student motivation is not affected when students are in direct reading programs versus meaning-based programs (Stahl, McKenna, & Pagnucco, 1994). Indeed, these perceptions of reading programs likely influence teachers' behaviour and choice of teaching and / or reward procedures. Study 2 and 3 investigates pre-service teachers', with some practicum experience, and practicing teachers' perceptions of direct versus meaning based teaching procedures and the use of incentives in educational settings.

Table 3.1

Perceptions of the Teaching Procedures Portrayed in the Scenarios (means and standard deviations)

Teaching Procedures	Meaning-based (praise)	Direct (praise)	Direct (token)
Explicit	.27^a (.88)	1.09^b (.80)	1.26^b (.80)
Autonomy-supportive	.81^a (1.29)	-1.11^b (1.01)	-1.33^b (1.12)
Motivating	1.57^a (1.02)	.69^b (1.48)	.70^b (1.38)
Fair	1.35 (1.14)	.97 (1.43)	.68 (1.43)

Note. Means followed by different superscripts indicate statistically significant differences ($p < .01$).

Table 3.2

Perceptions of the Reward Procedures Portrayed in the Scenarios (means and standard deviations)

Reward Procedures	Meaning-based (praise)	Direct (praise)	Direct (token)
Explicit	$.42^{a}$ (1.07)	1.00^{b} (.91)	1.94^{c} (.67)
Autonomy-supportive	$.70^{a}$ (1.99)	$-.82^{b}$ (1.13)	-1.69^{c} (.98)
Motivating	1.62^{a} (.98)	$.96^{ab}$ (1.46)	$.57^{b}$ (1.65)
Fair	1.38^{a} (1.06)	$.68^{b}$ (1.40)	0.00^{c} (1.41)

Note. Means followed by different superscripts indicate statistically significant differences ($p < .05$).

Table 3.3

Participants' Inferences About how the Program Made the Jennifer Feel (means and standard deviations)

Inferences of feelings	Meaning-based (praise)	Direct (praise)	Direct (token)
Competence	1.68^a (.89)	.49^b (1.26)	-.03^b (1.39)
Autonomy	1.38 ^{a}(.82)	-.23^b (1.06)	-.76^c (1.07)
Self-worth	1.65^a (.74)	.60 ^{b}(1.04)	.37 ^{b}(1.18)
Well-being	1.82 ^{a}(.81)	.75 ^{b}(1.04)	.12^c (1.38)
Motivation	1.91^a(.82)	.39^b (1.37)	.21^b (1.40)

Note. Means followed by different superscripts indicate statistically significant differences ($p < .05$).

Table 3.4

Attributions of Jennifer's Grade 1 Reading Performance (means and standard deviations)

Attributions	Meaning-based (praise)	Direct (praise)	Direct (token)
External factors	3.31^{a} (.91)	3.46^{ab} (1.01)	3.87^{b} (1.03)
Internal Factors	3.94(1.39)	4.08 (1.27)	3.95 (1.09)

Note. Means followed by different superscripts indicate statistically significant differences ($p < .05$).

Table 3.5

Attributions of Jennifer's Reading Performance During the Reading Program (means and standard deviations)

Attributions	Meaning-based (praise)	Direct (praise)	Direct (token)
External factors	4.52 (.67)	4.60 (.69)	4.68 (.74)
Internal Factors	5.45^{a} (.79)	5.31^{ab} (.86)	4.96^{b} (.92)

Note. Means followed by different superscripts indicate statistically significant differences ($p < .05$).

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Table 3.6

Attributions about Jennifer's Future (grade 3) Reading Performance (means and standard deviations)

Attributions	Meaning-based (praise)	Direct (praise)	Direct (token)
External factors	4.09 (.70)	3.99 (.78)	4.04 (.76)
Internal Factors	5.39^a (.81)	5.42^a (.75)	4.73^b (1.14)

Note. Means followed by different superscripts indicate statistically significant differences ($p < .05$).

Table 3.7

Single Likert Items (means and standard deviations)

Likert Items	Meaning-based (praise)	Direct (praise)	Direct (token)	F value	p value
Jennifer deserves credit.	6.38 (.95)	6.38 (.77)	5.98 (1.07)	F(2,139)=2.93	.057
There are explicit incentives to read.	4.11^a(1.68)	4.43^a(1.49)	6.19^b (.92)	F(2,139)=29.73	<.001
Jennifer felt controlled*.	5.00^a (1.43)	3.51^b (1.34)	2.83^c (1.32)	F(2,137)=27.00	<.001
Jennifer is motivated to read.	5.59^a (.90)	4.43^b (1.31)	3.96^b (1.35)	F(2,135)=18.97	<.001
The TA deserves credit.	4.81 (1.10)	4.31 (1.40)	4.24 (1.34)	F(2,138)=2.29	n.s.
Jennifer's performance is self-determined.	4.78^a (1.69)	3.91^b(1.43)	3.11^c(1.52)	F(2,138)=12.46	<.001
Jennifer's self worth is lessened*.	5.89^a (1.17)	5.05^b (1.54)	4.43^b(1.61)	F(2,138)=10.17	<.001
How well Jennifer will be reading in 12 weeks.	4.95 (1.15)	4.84 (.86)	4.61 (1.06)	F(2,137)=1.25	n.s.
Jennifer's future feelings of reading competence.	5.46^a (.96)	4.70^b (1.28)	4.15^b (1.27)	F(2,137)=12.07	<.001
Jennifer had choice.	2.95^a (2.01)	1.71^b (.96)	1.77^b(1.13)	F(2,139)=10.93	<.001

Note. Means followed by different superscripts indicate statistically significant differences ($p < .05$).

* Indicates that the item was reverse scored.

Table 3.8

Money assigned to Jennifer, Her Teacher, and the Teacher Assistant (means and standard deviations)

People in scenarios	Meaning-based (praise)	Direct (praise)	Direct (token)
Jennifer	55.42 (18.38)	56.43 (25.62)	53.19 (24.65)
Jennifer's teacher	19.72 (10.55)	20.32 (14.00)	21.62 (12.50)
The teacher assistant	24.72 (12.70)	21.50 (14.39)	25.18 (16.04)

Table 3.9

Perceptions of Likelihood of Improved Performance, Success of Program, Success of Reward Procedures, and Increased Motivation (means and standard deviations)

Likelihood Perceptions	Meaning-based (praise)	Direct (praise)	Direct (token)
Performance	40.27^{a} (18.41)	50.18^{b} (15.35)	46.96^{ab}(18.06)
Success of Program	53.92 (13.75)	55.79 (11.49)	51.20 (12.79)
Reward Procedures	62.43^{a} (19.78)	62.63^{a} (17.06)	50.65^{b} (20.27)
Motivation	58.38^{a} (14.39)	46.00^{b} (17.09)	30.32^{c} (20.01)

Note. Means followed by different superscripts indicate statistically significant differences ($p < .05$).

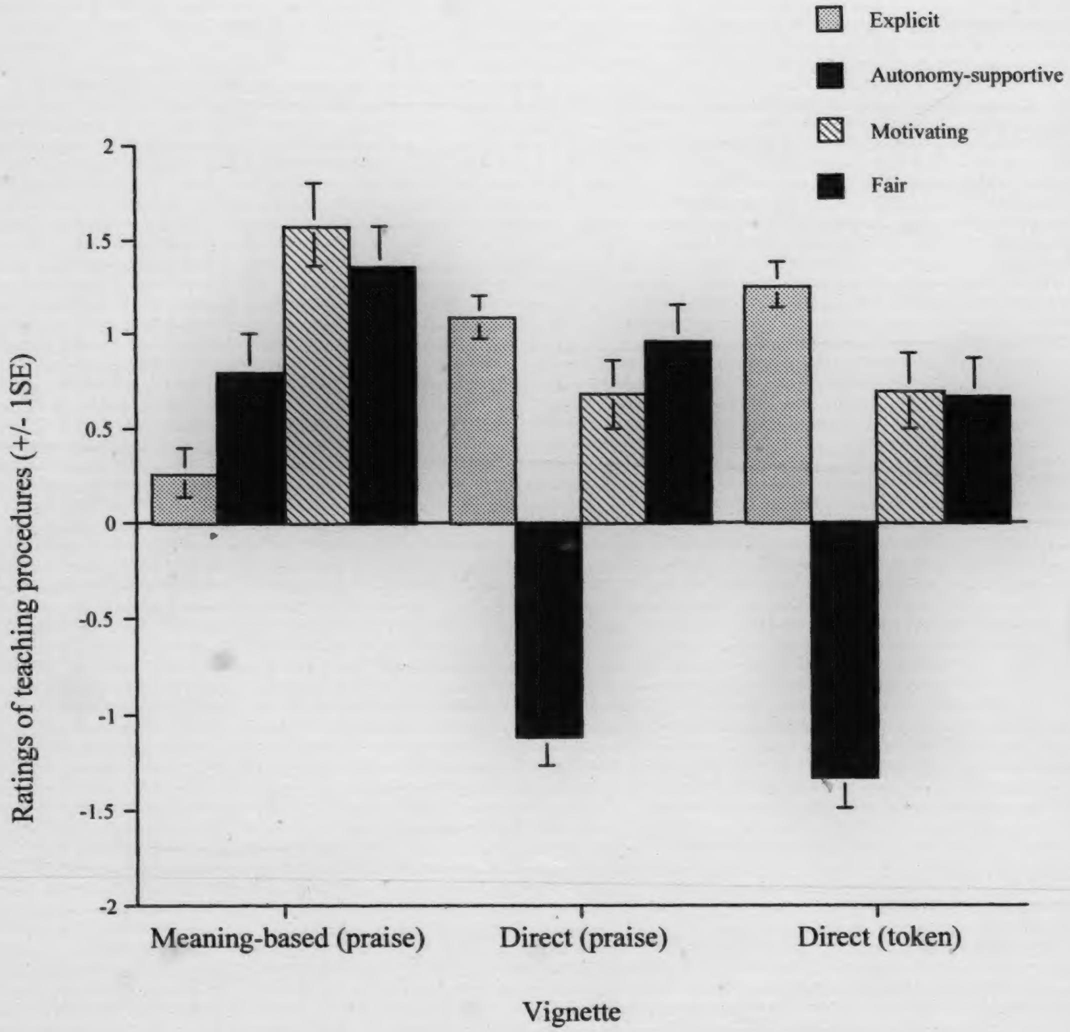

Figure 3.1. Participants' perceptions of the teaching procedures portrayed in the vignettes.

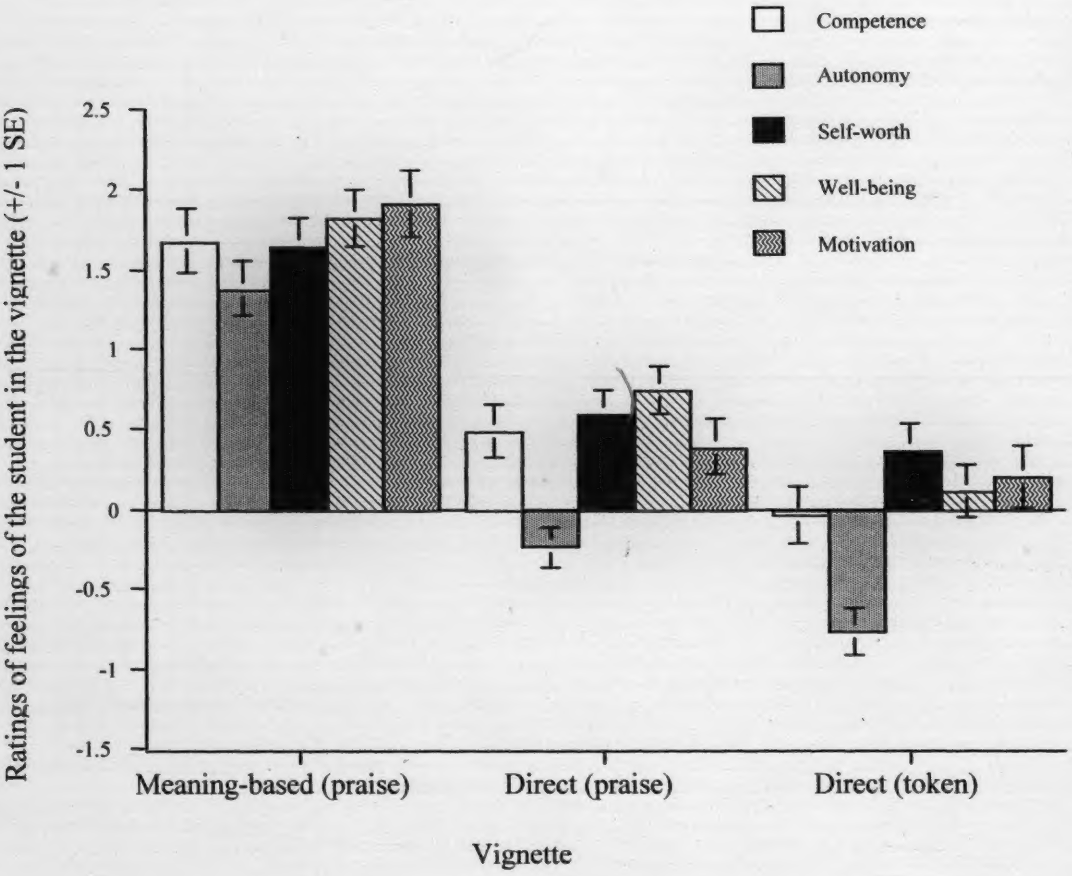

Figure 3.2. Inferences about how the reward program (described in the scenario) made

the student (Jennifer) feel.

Chapter 4

Study 2

Overview

Study 2 was designed to gather information from pre-service teachers, who had at least 4 weeks of teaching experience, about perceptions of attributions of performance, self-determination, and assignment of credit in direct and meaning-based reading programs. Information gathered from Study 1 was used to revise the scenarios and questionnaire measures, as well as to explore the hypotheses from Study 1. For the second study, six scenarios were developed to analyze different components of reading programs. Overall, three variables were investigated; type of reading program (direct vs. meaning-based), reward type (token vs. praise), and reward contingency (whether or not there was a performance standard). These variables were confounded in Study 1. The scenarios were also revised so that the wording was standardized across conditions and the length of each scenario was similar. The scenarios are presented in Appendix E.

The study used a 2X2X2 design with missing cells. The scenarios varied in terms of the teaching program (direct instruction, meaning-based), the type of reward received (token, praise), and reward contingency (meeting a performance standard, no performance standard). However, there was no performance standard in the meaning-based scenarios indicating that there were two missing cells. Meaning-based programs define reading in such a way that the meaning of the text is most important. That is, it is acceptable for a student to make errors when reading, as long as the text still has meaning. Therefore, students are rewarded for reading, regardless of errors in the meaning-based scenarios. This design improves on the design in Study 1 and allows one to test hypotheses about different components of the reading programs. The design of the study is presented in Figure 4.1.

In Study 2, pre-service teachers, who had completed their practicum, read one of six scenarios followed by a questionnaire. The questionnaires are presented in Appendix F. Attribution theory predicts that participants in the direct instruction conditions will attribute student performance to external factors while participants in the meaning-based scenario will attribute student performance to internal factors. It is expected that participants will make more internal attributions in the meaning-based condition because the instructional procedures are more obscure. The use of tangible rewards will lead to more external attributions as tangible rewards are more obvious than praise.

According to self-determination theory (SDT), when instructional methods are explicit, as in direct methods for teaching reading, teachers will view the program as more controlling. Tangible rewards and performance standards will also be seen as controlling. In turn, it is hypothesized that teachers will infer that students in direct programs will feel less autonomous, less competent and less intrinsically motivated. According to SDT, students will also perform better in more autonomy-oriented classrooms such as the one depicted in the meaning-based scenarios. In Study 1, participants rated the student as more likely to improve in direct programs, but less autonomous and intrinsically motivated. Study 2 was designed to determine if this would be the case when pre-service teachers with some teaching experience rated the programs.

Based on Skinner (1971), the prediction is that teachers will give less credit to students in programs that use direct, explicit teaching procedures and tangible rewards because there is an obvious cause for the student's performance. Teachers will also perceive the student's self worth as threatened. When there are less obvious causes for behaviour, such as when teachers use meaning-based teaching approaches and / or praise, teachers will give the student more credit and see them as more worthy of their accomplishment. It is also hypothesized that reward contingencies based on meeting a performance standard will be more conspicuous than non-performance based rewards, and the observer will less credit to the student.

Participants

Participants (N=112) were volunteers in fourth year education courses at a major University in Western Canada. All participants had at least 4 weeks of teaching experience through their teaching practicuum. One hundred twenty four students volunteered for the study and were randomly assigned to one of six scenarios. Five questions followed the readings; these questions were designed to assess whether the students correctly read the scenario (manipulation check). Twelve participants did not answer the manipulation questions correctly and were omitted from the study. The final sample was made up of 112 participants (20 read the Direct / Token / Performance Standard, 19 read the Direct / Praise / Performance Standard, 15 read the Direct / Token / No Performance Standard, 19 read Direct / Praise / No Performance Standard, 20 read the Meaning-Based / Token / No Performance Standard, 19 read the Meaning-Based / Praise / No Performance Standard). The following participants were lost from the different conditions because they did not answer the manipulation check questions correctly: 6 participants were lost from the Direct / Praise / No Performance Standard, 2 from the Direct / Token / No Performance Standard, 2 from the Meaning / Praise / No Performance Standard, and 2 from the Meaning / Token/ No Performance Standard. The majority of participants who were lost were given the Direct scenarios that did not have a performance standard. Most participants incorrectly indicated that there was a performance standard in that scenario.

Procedure

Prior to administering the study, the scenarios were randomized using a blocked randomization schedule to ensure there were equal participants in each group. One graduate student administered the study in four different classrooms. The same procedures that were used during Study 1 were used for Study 2.

Dependent Measures

Perceptions of teaching and reward procedures. Three bipolar items (clear/vague, visible/unnoticeable, glaring/hidden) were used to assess how explicit the participants perceived the teaching and reward procedures portrayed in the scenarios. Two items (explicit/ambiguous, subtle/obvious) were removed from the original questionnaire in Study 1 because they did not correlate highly with the other measures. One item (conspicuous/inconspicuous) was removed because there was confusion about the meaning of the words. Each item was measured on a 7-point scale and later coded as 3, 2, 1, 0, -1, -2, -3. For each descriptor in the pair, the positive adjective was coded with positive numbers and the negative adjective was coded with negative numbers. The ratings given by participants on all three items were summed and divided by 3 to create a composite measure of explicitness of the teaching procedures. Three bipolar items were designed to assess whether participants viewed the teaching program as autonomy-supportive (self-initiating/controlling, flexible/authoritative, unconstraining/coercive). One item measured how motivating participants rated the teaching and reward procedures (motivating/discouraging) and one item measured how fair the participants rated the procedures (fair/unfair).

Inferences about how the student in the scenario felt during the program. Thirteen bipolar items were designed to assess the participants' perceptions of how the instructional program made the student (Jennifer) feel. Each item was measured on a 7-point scale and coded from 3 to -3. Three items made up the perceived sense of competence scale (Jennifer felt competent/incompetent, capable/unable, confident/unsure); three items made up the perceived feelings of autonomy scale (Jennifer felt at ease/intimidated, free/constrained, relaxed/nervous); three items made up the perceived sense of self-worth scale (Jennifer felt deserving/unworthy, valuable/worthless, proud/humble); the perceived feelings of value scale consisted of one item (Jennifer felt good/bad); and the perceived sense of motivation scale consisted of two items (Jennifer felt interested/bored, motivated/inspired). Two items (calm/anxious, easy-going/overwhelmed) that were used in Study 1 were removed because they had the lowest correlation with the other items in the feelings of autonomy and value composites.

Perceptions of success. Participants were asked to rate how successful (1=very successful to 7=not successful) they thought that Jennifer would be in the reading program depicted in the scenario.

Attributions of Jennifer's performance. Thirteen 6-point Likert items (1=strongly agree to 6=strongly disagree) were then used to assess the degree which Jennifer's success (or failure) in the remedial reading program was due to external factors (help from TA, pressure from the program, feedback, rewards, teacher, reading program used, pressure from TA, books used, amount of practice) or internal factors (effort, ability, motivation, interest). Based on results from Study 1, four variables (books used, amount of practice, pressure from the program, pressure from the teacher) were added to the external composite measure; the variable luck was removed. The variable intelligence was removed from the internal composite as each scenario indicates that the student in the scenario is of average intelligence. In Study 1, participants were asked to make attributions about Jennifer's grade 1 performance and future performance. These items were removed as there was no information provided in the scenarios to make these determinations. As well, the middle value on all attribution items was eliminated from the Likert scale as most participants in Study 1 chose the middle value on the attributions items. The purpose of this change was to identify whether participants favoured internal or external attributions towards the student in the scenario's performance.

Self-determination items. Five 7-point Likert items (1 = Strongly Disagree to 7 = Strongly Agree) were designed to assess participants perceptions of the student's self-determination. The five items (Jennifer is reading because she chose to, because she felt she had to, because she was pressured, because she wanted to, and because she was pursuing her own goals.) were combined into a composite scale called self determination.

Single Likert items. Ten single 7-point Likert items (1=Strongly Disagree to 7=Strongly Agree) were used to measure perceptions of how controlling the procedures were (i.e. Jennifer felt controlled during the program), Jennifer's motivation in the program (i.e. Jennifer is motivated to read.), Jennifer's reading competence (i.e. How poorly (or well) do you think Jennifer will be reading in 12 weeks?), autonomy (i.e. Jennifer's reading performance is self-determined.), attributions (i.e. Jennifer is able to read because she put in effort), and the explicitness of the procedures (i.e. There are explicit incentives for Jennifer to read). These items were analyzed individually.

Internal and external attributions. Two additional items were used to assess internal and external attributions of the student in the scenario. The two items measured whether Jennifer's performance was due to Jennifer or due to others and whether Jennifer's performance reflects an aspect of Jennifer or reflects an aspect of the situation.

Attribution of credit. Perceptions of credit were measured by asking who deserves the most and least credit for improvements in Jennifer's reading performance. The question that asked participants to imagine participants had 100 dollars and had to award money to Jennifer, the teacher, and the teacher assistant based on the credit they deserve was omitted. This item was omitted because in Study 1 all participants, regardless of the condition they were in, responded in the same way. Three Likert items (Jennifer deserves credit for her accomplishments, Jennifer should be commended for her reading performance, and Jennifer should be acknowledged for her performance in the reading program.) were combined into a composite measure called credit to explore participants' attributions of credit in the reading programs presented.

Likelihood items. Five probability items asked participants the likelihood, from 0 to 100 percent, of certain events. Participants rated the likelihood that Jennifer will improve her reading, will read most of the time without errors, will read at grade level after 12 weeks, will read in the summer for fun, and will become an avid reader. These items were analyzed individually. Two items from Study 1 (likelihood that reward procedures would result in Jennifer improving reading, likelihood Jennifer will need a remedial reading program next year) were omitted.

Intrinsic motivation. Three items (Jennifer will read each day of her summer holidays, Jennifer will be motivated to read during her summer holiday, and will enjoy reading in the summer) on 7-point Likert scales measured Jennifer's future motivation to read. These items were combined into a composite scale called intrinsic motivation. One item (Jennifer will read during her free time) that was used during Study 1 was omitted because it did not correlate as highly with the other items in the composite.

Results

Perceptions of teaching procedures.

Each of the four scales (explicit, autonomy-supportive, motivating, and fairness) were analyzed with two separate 2 x 2 analyses of variance (ANOVA). The first ANOVA compared two levels of program (direct and meaning-based) with two levels of reward (token and praise). Direct scenarios with a performance standard were removed as there was not a meaning-based scenario to compare it to. A second 2 X 2 ANOVA was conducted on the direct program with two levels of reward (token and praise) and two levels of reward contingency (performance standard and no performance standard).

Two by two ANOVAs of program by reward on the four measures of perceptions of explicitness, autonomy, motivation, and fairness indicated significant main effects of program on the explicit scale, $F(1, 64) = 4.46$, $p = .039$, $d = 0.53$; the autonomy-supportive scale, $F(1, 66) = 60.72$, $p < .001$; $d = 0.89$, and the motivating item, $F(1, 69) = 4.97$, $p = .029$, $d = 0.54$. Results indicate the participants who read the direct instruction scenarios rated the scenarios as significantly more explicit, less autonomy supportive, and less motivating than participants who read the scenarios describing the meaning-based scenario. The means and standard deviations are presented in Table 4.1. There were no main effects of reward type and no significant interaction of program by reward type on these measures. On the Fair item, there was no significant effect of program or reward and no interaction of program by reward type.

Two by two ANOVAs of reward type and reward contingency in the direct program showed no significant main effect of reward type or reward contingency and no interaction of reward type by reward contingency.

Perceptions of reward procedures

The same bipolar items used to assess perceptions of the teaching procedures were used to evaluate perceptions of the reward procedures. Two by two ANOVAs of reward type and program, with performance standard removed, revealed a significant main effect of reward type on the explicit scale, $F(1, 66) = 14.76, p < .001$; there was no main effect of program. Results also indicated a significant main effect of reward type, $F(1, 67) = 6.24, p = .015$, and a significant main effect of program, $F(1, 67) = 4.89, p = .031$, on the autonomy-supportive scale. Results indicate that participants who read the token scenarios rated the reward procedures as more explicit ($M = 1.55, SD = .97$) than participants who read the praise scenarios ($M = .61, SD = 1.00, d = 0.89$). Participants who read the meaning-based scenario rated the reward procedures as more autonomy supportive ($M = .04, SD = 1.07$) than those who read the direct scenario ($M = -.48, SD = 1.07, d = 0.49$). As well, participants who read the scenarios that used praise to reward the student rated the reward procedures as more autonomy-supportive ($M = .07, SD = 1.04$) than those who read the token scenarios ($M = -.53, SD = 1.08, d = 0.57$). There were no significant effects on the motivating and fair items. There were no interaction effects of program by reward type on any of the scales.

Analyses of the two levels of reward and two levels of reward contingency in the direct scenarios indicated significant main effects of reward type on the explicit, $F(1, 67) = 5.91, p=.018$, and motivating $F(1, 68) = 4.30, p=.042$, scales. Participants who read the token scenarios rated the reward procedures as more explicit ($M = 1.34, SD = .98$) than those who read praise scenarios ($M = .89, SD = 1.06, d = 0.44$). In addition, participants who read the token scenarios rated the reward procedures as more motivating ($M = 1.18$, $SD = 1.17$) than those who read the praise scenarios ($M = .97$, $SD = 1.47$, $d = 0.16$). There were no significant main effects of reward contingency and there were no interaction effects of reward type by reward contingency on these variables. As well, there were no main effects of reward type or reward contingency or interaction effects on the autonomy supportive scale or the fair item.

Inferences about how the reading program made the student (Jennifer) feel

Two by two ANOVAs of program by reward, with reward contingency removed, indicated significant main effects of program on the autonomy scale, $F(1, 64) = 3.89$, $p = .05$; and the motivation item, $F(1, 67) = 5.55$, $p = .021$. Participants who read the meaning-based scenario rated the student in the scenario as feeling more autonomous ($M = 1.06$, $SD = .97$, $d = 0.51$) and more motivated ($M = 1.16$, $SD = 1.04$, $d = 0.57$) than those who read the direct instruction program ($M = .43$, $SD = 1.52$, and $M = .46$, $SD = 1.45$, respectively). There were no main effects of reward type or interaction effects on these items. As well, there were no significant main effects of program or reward and no interaction effects on the competence, self-worth, and well-being scales.

ANOVAs on the direct program showed no significant main effect of reward type, no main effect of reward contingency, and no interaction effects on the items that measured perceptions of the student's feelings in the program.

Perceptions of success

On the items asking participants how successful Jennifer would be in the programs depicted in the scenarios, there were no significant main effects of program or reward type; there were also no interaction effects. In the direct program, there were no main effects of reward type or reward contingency. However, there was a significant interaction effect of reward type by reward contingency, $F(1, 69) = 4.55$, $p = .037$. This interaction is presented in Figure 4.2. Participants rated Jennifer as more likely to be successful in the praise / performance standard scenario ($M = 5.53$, $SD = 1.07$) than participants in the praise / no performance standard ($M = 4.73$, $SD = 1.15$, $d = 0.72$). On the other hand, participants in the token / no performance standard ($M = 5.33$, $SD = 0.81$) rated Jennifer as more successful than participants who read the scenarios with the token / performance standard ($M = 5.05$, SD = 1.15, $d = 0.33$).

Attributions of Jennifer's performance

A 2 X 2 analysis of program by reward type on the external attribution composite revealed marginally significant effects of program, $F(1, 65) = 3.58$, $p = .06$, and reward type, $F(1, 65) = 3.26$, $p = .08$. Participants who read the direct scenarios ($M = 4.00$, $SD = .50$) attributed Jennifer's performance more to external factors than participants who read the meaning-based scenarios ($M = 3.67$, $SD = .65$, $d = 0.55$). Participants who read the token scenarios ($M = 3.94$, $SD = .49$) also attributed Jennifer's performance more to external factors than participants who read the praise scenarios ($M = 3.68$, $SD = .68$, $d = 0.44$). On the internal attribution composite, there was a significant effect of program, $F(1, 66) = 9.90$, $p = .002$; there was no main effect of reward type. Participants given the meaning-based scenarios attributed Jennifer's performance more to internal factors (*M* = 4.35, *SD* = .79) than participants given the direct instruction scenarios (*M* = 3.68, *SD* = .96, *d* = 0.77). There were no interaction effects between reward type and teaching program on these composites.

Two by two ANOVAs of reward type and reward contingency in the direct instruction scenarios indicated that there were no significant main effects of reward type or reward contingency. There were also no interaction effects.

Self-determination items

Analyses of program and reward type on the self-determination composite revealed that there was a significant main effect of program, $F(1, 67) = 8.64$, $p = .005$. Participants who read the meaning-based scenarios rated the student in the scenario as more self-determined (*M* = 4.08, *SD* = 1.14) than those who read the direct instruction scenarios (*M* = 3.26, *SD* = 1.14, *d* = 0.70). There was no main effect of reward or interaction effect of reward type and program in the scenarios.

On the direct instruction scenarios, there were no main effects of reward type or reward contingency. There were also no interaction effects.

Single Likert Items

Ten single Likert items were also analyzed. Because there were ten items that were tested, the level of significance was changed from .05 to .005 for each test, using a Bonferroni correction (Shaffer, 1995). Analyses of two by two ANOVAs of program type by reward showed that two of the nine items indicated statistically significant main effects of program type and one of the nine items showed statistically significant main effects of reward type using the corrected alpha. Results, along with means and standard deviations for participants' responses to single Likert items measuring control, credit, motivation, performance, autonomy in the program, explicitness of the teaching procedures, and future competence, are presented in Table 4.2. There were no interaction effects of program by reward type on any of the items.

In terms of participants' inferences about the explicitness of incentives, Table 4.2 shows that participants who read the scenarios with the token reward rated the incentives as significantly more explicit ($p < .001$) than those who read the praise scenarios. Participants who read the meaning-based scenarios perceived Jennifer as feeling less controlled and than participants who read the direct instruction scenarios ($p < .001$). ANOVAs on the reward type and reward contingency in the direct program indicated a significant main effect of reward type on the explicit item, $F(1,66) = 47.79, p < .001$. There was no main effect of reward contingency. Participants who read the token scenarios ($M = 5.67, SD = 1.14$) rated the rewards as more explicit than those who read the praise scenarios ($M = 3.63, SD = 1.23, d = 1.71$). There were no significant main effects on the other eight items.

There was a significant interaction on the item that asked participants about the self worth of the student in the scenario ($p = .011$). Participants who read the token scenario without a performance scenario ($M = 4.53, SD = 1.77$) rated the student in the scenario as having higher self worth than those who read the token scenario with a performance standard ($M = 4.25, SD = 1.25, d = 0.19$). On the other hand, participants who read the praise scenario with a performance standard ($M =$

5.84, *SD* = 1.02) rated the student as having higher self worth than those who read the praise scenario without a performance standard (*M* = 4.37, *SD* = 1.64, *d* = 1.11). An examination of Figure 4.3 indicates that participants who read the praise performance standard scenario rated the student as feeling more worthy than participants in the other three conditions.

Internal and external attribution items

Two additional Likert items were added to the questionnaire to assess whether participants attributed the student in the scenario's performance to internal and external sources. The results, means, and standard deviations of the ANOVA on program and reward type are presented in Table 4.3.

Results indicate that participants who read the meaning-based scenarios rated Jennifer's performance due more to something internal to the student than an aspect of the situation. This is consistent with the other attribution items. There were no significant interaction effects on these two items. Analyses on reward type and reward contingency on the direct instruction scenarios indicated no significant main effects or interaction effects.

Credit items

Analyses on the credit composites indicated that there were no significant main effects or interaction effects when comparing program by reward type in the scenarios without a performance standard. When analyzing reward type by performance standard in the direct scenarios, a significant interaction was found. Participants in the token / no performance standard condition gave Jennifer more credit (*M* = 5.98, *SD* = .98) than participants in the token / performance standard group ($M = 5.63$, $SD = 1.12$, $d = 0.33$). On the other hand, participants in the praise / performance standard rated Jennifer as deserving more credit ($M = 6.26$, $SD = .61$) than participants in the praise / no performance standard condition ($M = 5.53$, $SD = .76$, $d = 0.89$). This interaction is depicted in Figure 4.4.

A chi square test of independence on the item asking participants to choose who deserves the most credit for improvements in Jennifer's reading performance indicated a significant effect of program x^2 (1, N = 109) = 7.84, $p = .004$. Comparison of the percentage of participants assigning credit to Jennifer (as opposed to the teaching assistant) for direct versus the meaning-based programs indicated 57 percent gave credit to the student in the direct program and 84 percent assigned credit to Jennifer in the meaning-based scenario. Participants always gave the student more credit than the teaching assistant, but the assignment of credit was considerably enhanced in the unstructured, meaning-based program. Results are presented in Table 4.4. There was no significant effect of reward type on this item.

On the item asking participants who deserves the most credit for Jennifer's improvement, an analysis could not be performed based on program because three cells had expected counts less than five. There was no significant effect of reward on this item.

Likelihood items

ANOVAs of program by reward type on the likelihood items indicated statistically significant effects of program on the items asking about the likelihood that Jennifer will read without errors, $F(1, 69) = .040$, $p = .045$, and the likelihood that Jennifer will read in the summer for fun, $F(1, 69) = 8.443$, $p = .005$. Participants who read the direct instruction scenarios rated Jennifer as more likely to read without errors (*M* = 55.59, *SD* = 19.41) than participants who read the meaning-based scenarios (*M* = 45.13, *SD* = 22.81, *d* = 0.49). On the other hand, participants who read the meaning-based scenario rated Jennifer as more likely to read in the summer for fun (*M* = 55.38, *SD* = 25.53) than participants who read the direct instruction program (*M* = 38.24, *SD* = 25.40, *d* = 0.63). There were no main effects of reward type or any significant interaction effects on these items.

There were also no significant differences on the likelihood that the program will result in Jennifer improving her reading, the likelihood that Jennifer will read at grade level, and the likelihood that Jennifer will become an avid reader throughout her life.

ANOVAs on reward type and reward contingency in the direct instruction scenarios indicated no significant main effects or interaction effects.

Intrinsic motivation

Two by two ANOVAs of program by reward type in the scenarios indicated that there was a statistically significant effect of program type on the intrinsic motivation scale, *F*(1, 69) = 5.53, *p* = .022. Participants who read the meaning-based program rated Jennifer as more intrinsically motivated (*M* = 3.66, *SD* = 1.50) than participants who read the direct instruction program (*M* = 2.86, *SD* = 1.40, *d* = 0.55). There was no main effect of reward type or interaction effects of program by reward. In the direct program, there were no significant main effects of reward type or reward contingency.

Discussion

Results from Study 2 are generally consistent with results from Study 1. Participants who read the direct instruction scenarios rated the scenarios as more explicit. Participants also rated the student in the direct instruction program as less autonomous, less intrinsically motivated, self-determined, and worthy than participants who read the meaning-based scenarios. These responses were enhanced when the program included the use of tangible rewards.

The second study also tested theoretical hypotheses based on attribution theory, self-determination theory, and Skinner's views presented in Beyond Dignity and Freedom. Attribution theory predicted that participants in the direct instruction conditions would attribute student performance more to external factors while participants in the meaning-based condition would attribute student performance to internal factors. Similar to the first study, this hypothesis was partially supported; participants who read the meaning-based scenario attributed reading performance more to internal factors. There was marginal support for the hypothesis that participants in the direct instruction condition would attribute behaviour more to external factors. It was also expected that when token rewards were used that participants would attribute performance more to external factors because there was a clear external cause for behaviour. This hypothesis was not supported.

According to self-determination theory (SDT), when instructional procedures are explicit, (i.e. use direct teaching procedures, tangible rewards, performance standards) pre-service teachers will view the procedures as controlling. Direct teaching procedures and token rewards were rated as more controlling than meaning-based scenarios and praise rewards. However, in the direct scenarios, performance standards were not rated as more controlling than no performance standard to receive a reward. Based on SDT, when teaching and reward procedures are viewed as controlling, participants would infer that the student in the program will feel less autonomous, less competent, less intrinsically motivated, and less self-determined. In regards to the teaching procedures and reward type, this hypothesis was generally confirmed. However, SDT would predict that a student would perform better in a classroom that is less controlling and more autonomy supportive. Findings from this study indicated that participants rated the likelihood of reading without errors as significantly higher in a direct teaching program. SDT would predict that a performance standard would lower intrinsic motivation. Participants who read the performance standard scenarios rated the student in the scenario as more intrinsically motivated than participants who read the no performance standard scenarios.

Based on Skinner (1971), it was hypothesized that participants would give less credit to the student in the program that used direct teaching procedures and tangible rewards as there is an obvious cause for the student's performance. In regard to the direct teaching procedures, this hypothesis was confirmed. It was not confirmed when comparing token and praise rewards. It was also hypothesized, based on Skinner's views, that participants would perceive the student's self worth as threatened in a program with explicit contingencies. This finding was also supported as participants perceived the student's self-worth as less in programs that used direct, explicit teaching procedures.

An examination of the impact of reward contingencies provided some interesting results. Participants who read the token / no performance and praise / performance standard scenarios rated the student as having higher self worth and deserving of credit than participants who read the token / performance standard and praise / no performance standard. This result was not expected.

Overall, despite the addition of two scenarios and the standardization of wording, similar results were gathered from pre-service teachers with teaching experience as from pre-service teachers without teaching experience. Both groups appear to view direct, explicit teaching and reward procedures as controlling and taking away from a student's intrinsic motivation, and feelings of self-worth and autonomy. This is despite substantial evidence that direct, explicit teaching procedures are most effective for teaching struggling students to learn to read. Study 3 determines if these perceptions are applicable to practicing teachers.

Table 4.1.

Perceptions of the Teaching Procedures Portrayed in the Scenarios (means and standard deviations)

Teaching Procedures	Direct	Meaning – Based
Explicit	1.14 (.98)^{a}	.62 (.95)^{b}
Autonomy-supportive	-1.01 (1.11)^{a}	.92 (.93)^{b}
Motivating	.56 (1.21)^{a}	1.26 (1.35)^{b}
Fair	1.26 (1.16)	1.23 (1.01)

Note: Means followed by different subscripts indicate statistically significant differences (*p*<.05).

Table 4.2

Single Likert Items (means and standard deviations)

Likert Items	Direct	Meaning-based	Token	Praise	Main Effect of Program F and p values	Main Effect of Reward Type F and p values
There are explicit incentives to read.	4.48 (1.74)	4.51 (2.01)	5.76 (1.21)	3.24 (1.54)	F(1,67)=.009 p=.926	F(1,67)=54.44 p <.001
Jennifer felt controlled.*	3.53 (1.50)	4.66 (1.15)	3.79 (1.25)	4.42 (1.54)	F(1, 68)=14.98 p<.001	F(1,68)=5.39 p =.023
Jennifer is motivated.	3.62 (1.60)	4.64 (1.39)	4.29 (1.38)	4.05 (1.72)	F(1, 69)=7.96 p=.006	F(1, 69)=.289 p=.593
Jennifer's performance is self-determined.	3.53 (1.54)	4.33 (1.44)	3.86 (1.56)	4.05 (1.53)	F(1, 69)=5.26 p=.025	F(1, 69)=.447 p =.506
Jennifer felt like she had control.	2.97 (1.49)	4.69 (1.34)	3.63 (1.54)	4.13 (1.73)	F(1,69)=28.92 p<.001	F(1, 69)=3.40 p =.07
Jennifer's self worth is lessened.*	4.44 (1.67)	5.38 (1.44)	4.94 (1.55)	4.95 (1.69)	F(1, 69)=6.40 p=.014	F(1,.69)=.023 p = .881
Jennifer is able to read because of effort.	4.65 (1.25)	5.31 (1.17)	5.20 (1.16)	4.82 (1.31)	F(1, 69)=4.99 p=.029	F(1, 69)=1.363 p =.247
How well will Jennifer be reading.	4.79 (1.11)	4.74 (.97)	4.91 (.82)	4.62 (1.19)	F(1, 68)=.052 p = .819	F(1, 68)=1.34 p =.252
Jennifer's future feelings of reading competence.	4.18 (1.29)	4.54 (1.10)	4.40 (1.19)	4.34 (1.21)	F(1, 69)=1.60 p=.211	F(1, 69)=.013 p =.908
Jennifer had choice.	2.06 (1.10)	2.51 (1.50)	2.34 (1.31)	2.26 (1.39)	F(1, 69)=2.03 p=.159	F(1, 69)=.020 p =.887

Note. Means followed by different superscripts indicate statistically significant differences ($p < .05$).

* Indicates that the item was reverse scored.

Table 4.3.

Attribution Items (means and standard deviations)

Attribution Items	Direct	Meaning-based	Token	Praise	Main Effect of Program F and p values	Main Effect of Reward Type F and p values
Jenn's reading reflects an aspect of Jenn or situation	3.44 (1.36)	3.97 (1.26)	3.65 (1.34)	3.78 (1.34)	F(1, 67)=3.19 p=.079	F(1, 67)=.379 p=.540
Jenn's reading is due to Jennifer or others	3.79 (.946)	4.28 (1.03)	3.94 (.97)	4.16 (1.05)	F(1, 67)=4.56 P=.036	F(1, 67)=1.06 p=.306

Table 4.4.

Crosstab asking Participants who Deserves the Most Credit for Improvements in Jennifer's Reading Performance.

Program	TA	Jennifer
Direct	42.3%	57.7%
Meaning-based	15.8%	83.2%

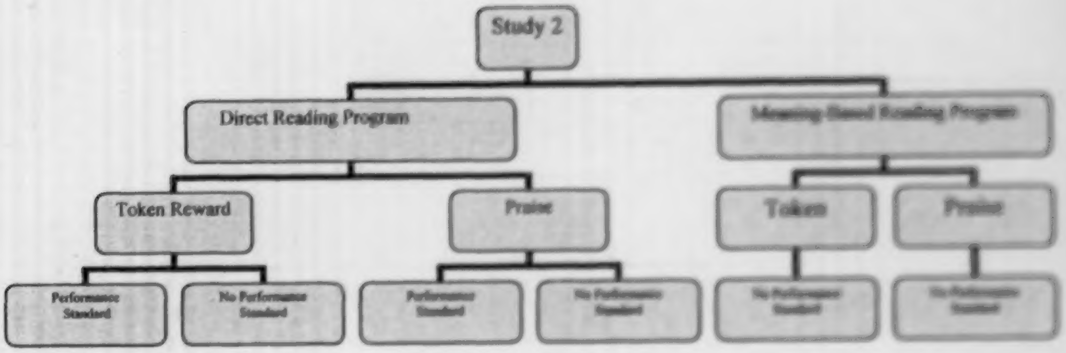
Study 2
Direct Reading Program
Meaning-Based Reading Program
Token Reward
Praise
Token
Praise
Performance Standard
No Performance Standard
Performance Standard
No Performance Standard
No Performance Standard
No Performance Standard

Figure 4.1. Diagram of the design for Study 2.

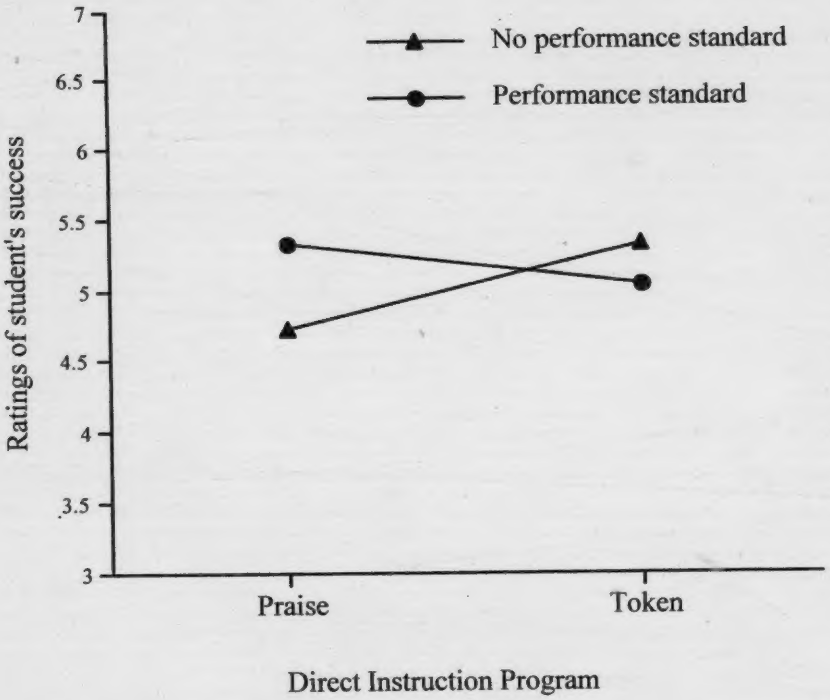

Figure 4.2. Interaction between reward type and reward contingency on ratings of student success in direct instruction conditions.

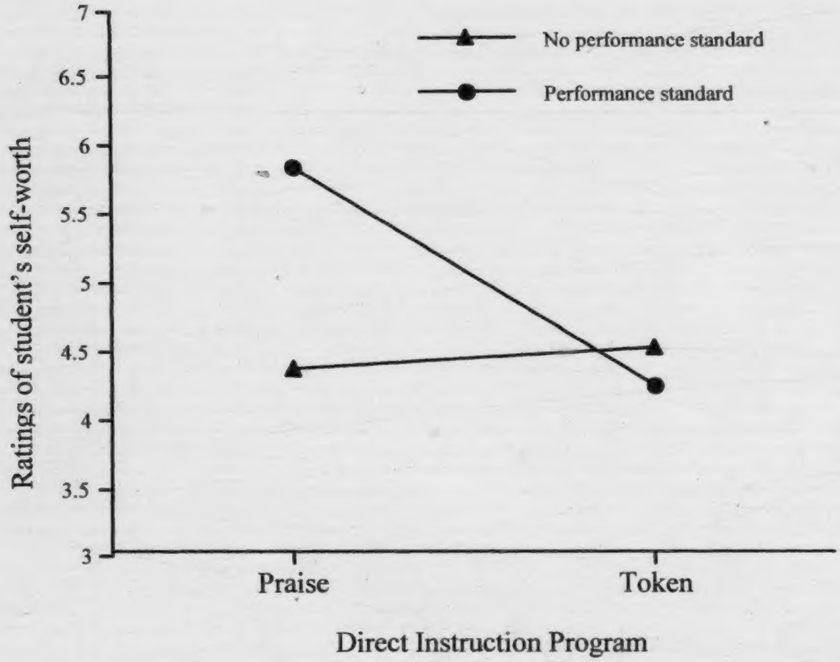

Figure 4.3. Interaction between reward type and reward contingency on ratings of student self-worth in direct instruction conditions.

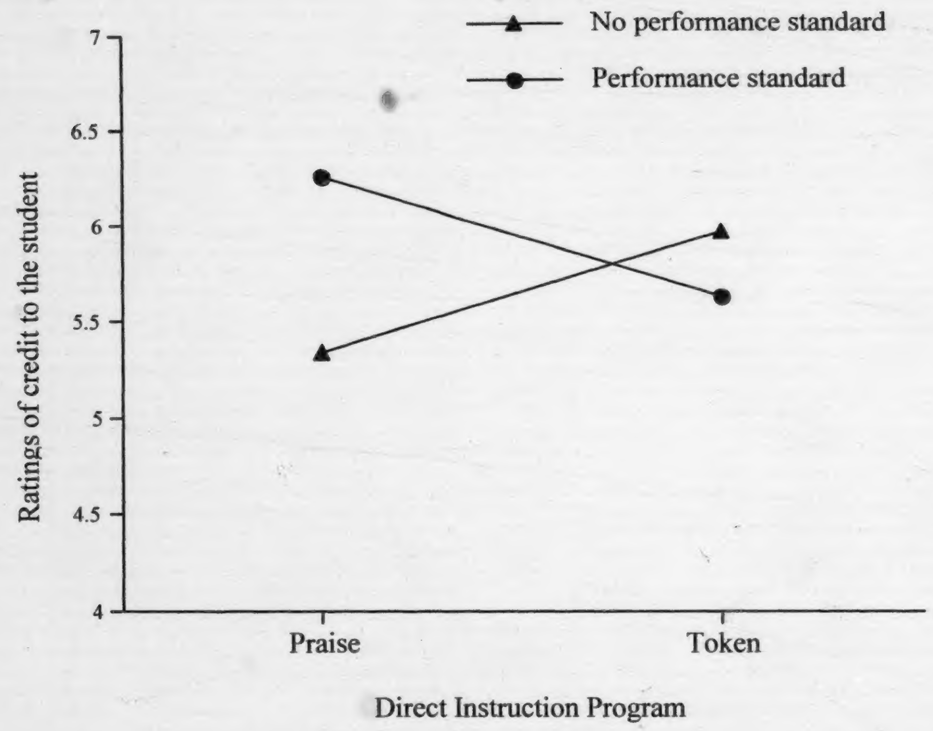

Figure 4.4. Interaction between reward type and reward contingency on ratings of credit given to student in direct instruction conditions.

Chapter 5

Study 3

Overview

Study 3 was designed to gather information from practicing teachers about perceptions of attributions of performance, self-determination, and assignment of credit in direct and meaning-based reading programs. The same six scenarios and questionnaires used in Study 2 were used in the third study. As well, the same hypotheses from Study 2 were investigated.

Participants

Participants (N = 115) were volunteers who were attending the Central East Teachers' Convention in Edmonton, Alberta. One hundred fifteen teachers volunteered for the study and were randomly assigned to one of six conditions. Five questions followed the readings; these questions were designed to assess whether the students correctly read the scenario (manipulation check). Twenty one participants did not answer the manipulation questions correctly and were omitted from the study. The final sample was made up of 94 participants (18 read the Direct / Token / Performance Standard, 14 read the Direct / Praise / Performance Standard, 16 read the Direct / Token / No Performance Standard, 14 read Direct / Praise / No Performance Standard, 16 read the Meaning-Based / Token / No Performance Standard, 16 read the Meaning-Based / Praise / No Performance Standard). The following participants were lost from the different conditions because they did not answer the manipulation check questions correctly: 6 participants were lost from the Direct / Token / No Performance Standard, 5 from the Direct / Praise / No

Performance Standard, 3 from the Meaning / Praise / No Performance Standard, 4 from Direct / Praise / Performance Standard, 2 from Direct / Token / Performance Standard, and 1 from the Meaning / Token/ No Performance Standard. The majority of participants who were lost were given the direct scenarios that did not have a performance standard. Most participants incorrectly indicated that there was a performance standard in that scenario. This is similar to the pattern of lost participants in the second study.

Procedure

Prior to administering the study, the scenarios were randomized using a blocked randomization schedule to ensure there were equal numbers of participants in each group. A table was set up at the East Central Teacher's Convention. Two graduate students invited teachers to participate and told teachers that they would read a scenario about a reading program and would be asked to answer a questionnaire about the scenario. After participants completed the questionnaire, they were given a written debriefing explaining the different scenarios presented and the hypotheses that were explored.

Dependent Measures

The same dependent measures that used in Study 2 were used in Study 3. Additional items included information on the background of the teachers. Three items were used to gather information on the population of teachers that were sampled. Teachers were asked the grade that they were currently teaching, the number of years they have been teaching, and the percentage of time they spend teaching reading. Two additional items asked participants how similar the scenario presented is to how the teachers teach reading and how similar the program described in the scenarios was to how they learned to teach reading in University.

Results

Demographics

The sample of teachers was made up of 15.7% of male teachers and 84.3% of female teachers. Before reading the scenarios, participants were asked what grade they taught ($M = 2.51$, $SD = 1.98$) and how many years that they had been teaching ($M = 14.69$, $SD = 9.02$). After completing the questionnaires, participants were asked if the program presented was similar to how participants learned to teach reading in University or whether the program presented was similar to how participants teach reading on a 7-point Likert scale (1=very similar to 7=Very different). Means for the items asking participants how similar the program in the scenario was to how they learned to teach reading in University were as follows: Direct Token Performance Standard 3.24, Direct Praise Performance Standard 3.08, Direct Praise No Performance Standard 3.00, Meaning-Based Praise No Performance Standard 2.75, Meaning-Based Token No Performance Standard 2.69, and Direct Token No Performance Standard 2.36. Means for the items asking participants how similar the program is to how participants teach reading were as follows: Meaning Praise No Performance Standard 4.06, Direct Praise No Performance Standard 3.71, Direct Token No Performance Standard 3.36, Meaning-based Token No Performance Standard 3.19, Direct Token Performance Standard 2.88, Direct Praise Performance Standard 2.83, and Direct Token No Performance Standard 2.25. An examination of means indicated that participants rated the meaning-based praise scenario as more similar to how participants teach reading than other scenarios.

Perceptions of teaching procedures.

Each of the four scales (explicit, autonomy-supportive, motivating, and fairness) were analyzed with two separate 2 x 2 analyses of variance (ANOVA). The first ANOVA compared levels of program (direct and meaning-based) with levels of reward (token and praise). Direct scenarios with a performance standard were removed as there was not a meaning-based scenario to compare it to. A second 2 X 2 ANOVA was conducted on the direct program with two levels of reward (token and praise) and two levels of reward contingencies (performance standard and no performance standard).

Two by two ANOVAs of program by reward type on the explicitness scale indicated a significant main effect of program on the explicit scale, $F(1, 59) = 14.51$, $p = .005$. Participants who read the direct scenarios rated the teaching procedures as more explicit ($M = .80$, $SD = 1.26$) than participants who read the meaning-based scenarios ($M = .64$, $SD = 1.09$, $d = 0.14$). There was no main effect of reward type.

There was also a significant interaction of program by reward type, $F(1, 59) = 9.71$, $p = .003$. Means indicated that participants who read the direct token ($M = 1.76$, $SD = .70$) scenarios rated the teaching procedures as more explicit than participants who read the direct praise scenarios ($M = .74$, $SD = 1.00$, $d = 1.67$); those in the meaning praise ($M = .56$, $SD = 1.18$) scenarios rated the teaching procedures as more explicit than participants who read the meaning token ($M = .00$, $SD = 1.04$, $d = 0.95$) scenarios. The interaction is presented in Figure 5.1.

An examination of Figure 5.1 indicates that participants who read the direct token scenario rated the teaching procedures as more explicit that participants in the other three conditions. A Scheffe complex post hoc comparison of direct token to the other three conditions revealed a significant difference; $F(3, 59) = 8.58, p < .001$.

On the autonomy-supportive scale, there was a significant main effect of program type, $F(1, 58) = 42.80, p < .001$, and a significant main effect of reward type, $F(1, 58) = .94, p = .018$. Participants who read the direct scenarios ($M = -.85$, $SD = 1.21$) rated the procedures as significantly less autonomy-supportive than participants who read the meaning scenarios ($M = .92$, $SD = 1.04$, $d = 1.58$). As well, participants who read the token scenarios ($M = -.19$, $SD = 1.37$) rated the teaching procedures as less autonomy-supportive than participants who read the praise scenarios ($M = .46$, $SD = 1.42$, $d = 0.47$). There was no significant interaction effect on this scale. There were no significant main effects of program or reward type and no significant interaction effects on the fair or motivating item.

Two by two ANOVAs of reward type and reward contingency in the direct program showed a significant main effect of reward type, $F(1, 55) = 6.71, p = .012$ on the explicit items. Participants who read the token scenarios ($M = 1.51$, $SD = .80$) rated the teaching procedures as more explicit than participants who read the praise scenario ($M = .94$, $SD = .93$, $d = 0.66$). There was no main effect of reward contingency. There were no significant main effects or interaction effects on the autonomy scale, motivating item, or fair item.

Perceptions of reward procedures

The same bipolar items used to assess perceptions of the teaching procedures were used to evaluate perceptions of the reward procedures. Two by two ANOVAs of reward type and program, with performance standard removed, revealed a significant main effect of reward type on the explicit scale, $F(1, 59) = 19.76$, $p < .001$; a significant main effect of reward type on the autonomy-supportive scale, $F(1, 59) = 20.34$, $p < .001$; a significant main effect of program type on the autonomy-supportive scale, $F(1, 59) = 7.13$, $p = .01$; and a significant main effect of reward type on the fair item, $F(1, 60) = 10.69$, $p = .002$. There were no significant main effects of program on the explicit scale or motivating item. There were no interaction effects on the two scales and two individual items and there were no main or interaction effects on the motivating item. Means and standard deviations are presented in Table 5.1.

Table 5.1 shows that participants who read the token scenarios rated the reward procedures as significantly more explicit ($d = 1.06$), less autonomy-supportive ($d = 1.09$), and less fair ($d = 0.85$) than participants who read the praise scenarios. Participants also rated the reward procedures as significantly less autonomy supportive ($d = 0.58$) when they read the direct scenarios than when they read the meaning-based scenarios.

Analyses of the two levels of reward and two levels of reward contingency in the direct scenarios indicated a significant main effect of reward on the explicit scale, $F(1, 56) = 32.39$, $p < .001$; there was no main effect of reward contingency. Participants who read the direct token scenarios ($M = 1.79$, $SD = .90$) rated the reward procedures as significantly more explicit than participants who read the direct praise scenarios (*M* = .40, *SD* = .96, *d* = 1.49).

Results also showed a significant effect of reward contingency on the autonomy-supportive scale, *F*(1, 52) = 4.60, *p* = .037; on the fair scale, *F*(1, 56) = 4.96, *p* = .03; and on the motivating item, *F*(1, 56) = 6.35, *p* = .015. Participants who read the direct scenarios without a performance standard rated the reward procedures as more autonomy supportive (*M* = -.23, *SD* = 1.55, *d* = 0.55), more fair (*M* = 1.23, *SD* = 1.10, *d* = 0.60), and more motivating (*M* = 1.57, *SD* = 1.17, *d* = 0.61) than participants who read the direct scenarios with a performance standard (*M* = -.96, *SD* = 1.13; *M* = .50, *SD* = 1.33; and *M* = .80, *SD* = 1.35; respectively). There was no significant main effect of reward type on these scales. There were no interaction effects of reward type and reward contingency in the direct program on the four scales.

Inferences about how the reading program made the student (Jennifer) feel

Two by two ANOVAS of program by reward, with reward contingency removed, indicated a significant main effect of program on the autonomy scale, *F*(1, 58) = 14.39, *p* < .001, but no main effects of reward type. Participants who read the meaning-based scenario (*M* = 1.57, *SD* = 1.01) rated Jennifer as feeling more autonomous than participants who read the direct scenario (*M* = 0.66, *SD* = 1.10, *d* = 0.87). There was also a significant interaction of program by reward on the autonomy scale. Participants who read the meaning praise scenario (*M* = 2.17, *SD* = .83) perceived the student as more autonomous than those who read the meaning token scenario (*M* = 1.00, *SD* = .83, *d* = 1.93); participants in the direct token condition rated the student as more autonomous (*M* = .84, *SD* = 1.12) than participants who read the direct praise (*M* = .45, *SD* = 1.08, *d* = 0.50) scenarios.

An examination of Figure 5.2 indicates that participants in the meaning praise condition rated the student in the scenarios as more autonomous than participants in the other three conditions. A Scheffe complex post hoc comparison of meaning praise to the other three conditions revealed a significant difference, $F(3, 58) = 7.18$, $p < .001$.

A significant main effect of program type was revealed on the motivation scale, $F(1, 58) = 7.39$, $p = .009$; there was no main effect of reward type. Participants who read the meaning-based scenario (*M* = 1.47, *SD* = 1.17) rated the student as feeling more motivated than participants who read the direct instruction (*M* = 0.72, *SD* = 1.20, *d* = 0.64) scenario. There was also a significant interaction of program by reward type, $F(1, 58) = 8.48$, $p = .005$. Participants who read the meaning praise scenario (*M* = 2.06, *SD* = 1.03) rated the student as more motivated than those in the meaning token group (*M* = .91, *SD* = 1.05, *d* = 1.78). Participants in the direct token condition rated the student as feeling more motivated (*M* = .97, *SD* = 1.19) than participants who read the direct praise (*M* = .46, *SD* = 1.20, *d* = 0.56) scenarios. Figure 5.3 indicates that participants in the meaning praise scenario rated the student in the student as feeling more motivated than participants in the other three participants. A Scheffe complex post hoc comparison of meaning praise to the other three conditions revealed a significant difference, $F(3, 58) = 4.74$, $p < .005$.

There were significant main effects of program type, $F(1, 58) = 5.63$, $p = .021$, and reward type, $F(1, 58) = 6.56$, $p = .013$, on the item that measured the student's perceived feelings of value. Participants who read the meaning-based scenario ($M = 1.70$, $SD = 1.02$) rated the student as feeling more valuable than participants who read the direct scenario ($M = 1.07$, $SD = 1.19$, $d = 0.57$). As well, participants who read the scenarios with praise ($M = 1.77$, $SD = 1.07$) rated the student as feeling more valued than participants who read the scenarios with a token reward ($M = 1.06$, $SD = 1.02$, $d = 0.68$). There was no significant interaction effect.

On the competence scale, there was no main effect of program or reward type. However, there was a significant interaction of program type by reward type, $F(1,58) = 7.21$, $p = .009$. An examination of Figure 5.4 indicated that participants who read the direct token scenarios rated the student as feeling more competent ($M = 1.18$, $SD = .96$) than participants in the direct praise condition ($M = 1.00$, $SD = 1.03$, $d = 0.26$). Those in the meaning praise group rated the student in the scenario as feeling more competent ($M = 2.04$, $SD = .80$) than participants who read the meaning token ($M = .94$, $SD = .95$, $d = 1.77$) scenarios. A Scheffe complex post hoc comparison of meaning praise to the other three conditions revealed a significant difference, $F(3, 58) = 3.45$, $p = .015$. There were no significant main effects of program type or reward type on the self worth scale. There was also no significant interaction effect.

ANOVAs on the direct program showed no significant main effect of reward type, no main effects of reward contingency, and no interaction effects on the items that measured perceptions of the student's feelings in the program.

Perceptions of success in program

On the item asking participants how successful Jennifer would be in the programs depicted in the scenarios, there were no significant main effects of program or reward type; there were also no interaction effects. Means and standard deviations for this item are as follows: direct token (*M* = 5.44, *SD* = 1.09), direct praise (*M* = 5.15, *SD* = .99), meaning token (*M* = 4.56, *SD* = 1.25), meaning praise (*M* = 5.18, *SD* = 1.47), direct token performance standard (*M* = 5.11, *SD* = 1. 49), direct token no performance standard (*M* = 5.44, SD = 1.09), direct praise performance standard (*M* = 5.17, *SD* = 1.34), and direct praise no performance standard (*M* = 5.31, *SD* = .99). In the direct program, there were no main effects of reward type or reward contingency and no interaction effects.

Attributions of Jennifer's performance

A 2 X 2 analysis of program by reward type on the internal attribution composite indicates there was a significant effect of reward type, *F*(1, 59) = 8.43, *p* = .005. Participants given the praise scenarios attributed Jennifer's performance more to internal factors (*M* = 4.56, *SD* = .77) than participants given the token reward scenarios (*M* = 3.99, *SD* = .83, *d* = 0.71). There were no main effects of program or interaction effects. On the external attribution scale, there were no main effects of program or reward and no interaction effects of reward type and teaching program. The means and the standard deviations on the external composite were as follows: direct program (*M* = 4.24, *SD* = .68), meaning-based program (*M* = 3.98, *SD* = .73), token (*M* = 4.02, *SD* = .63), and praise (*M* = 4.19, *SD* = .80).

Two by two ANOVAs of reward type and reward contingency in the direct instruction scenarios indicated that there were no significant main effects of reward type or reward contingency; there were also no interaction effects. There were marginally significant effects of reward type on the internal attributions scale, *F*(1, 53) = 3.40, *p* = .071. Participants who read the direct praise scenario attributed the students performance in the scenario more to internal (*M* = 4.34, *SD* = .74) factors than participants who read the direct token (*M* = 3.91, *SD* = .99, *d* = 0.49) scenarios.

Self-determination items

Analyses of program and reward type on the self-determination composite revealed that there was a significant main effect of program, *F*(1, 59) = 16.62, *p* < .001. Participants who read the meaning-based scenarios rated the student in the scenario as more self-determined (*M* = 4.32, *SD* = .89) than those who read the direct instruction scenarios (*M* = 3.30, *SD* = 1.12, *d* = 1.02). There was no significant main effect of reward and no interaction effect of reward type and program.

On the direct instruction scenarios, there were no main effects of reward type or reward contingency. There were also no interaction effects.

Single Likert Items

Ten single Likert items were also analyzed. Because there were ten items that were tested, the level of significance was changed from .05 to .005 for each test, using a Bonferroni correction (Shaffer, 1995). Analyses of two by two ANOVAs of program type by reward showed that two of the nine items indicated statistically significant main effects of program type and one of the nine items showed statistically significant main effects of reward type using the corrected alpha. There was a significant interaction of program by reward type on the item asking participants whether the student in the program felt controlled. Results, along with means and standard deviations for participants' responses to single Likert items measuring control, credit, motivation, performance, autonomy in the program, explicitness of the teaching procedures, and future competence are presented in Table 5.2.

In terms of participants' inferences about the explicitness of incentives, Table 5.2 shows that participants who read the scenarios with the token reward rated the incentives as significantly more explicit ($p = .003$, $d = 0.77$) than those who read the praise scenarios. On the item that asked participants about whether participants rated the student in the scenario as feeling controlled, there was a significant interaction between program type and reward type. Participants who read the direct token scenario rated the student as less controlled ($M = 3.71$, $SD = 1.38$) than those in the direct praise scenarios ($M = 3.42$, $SD = 1.45$, $d = 0.29$); on the other hand, participants in the meaning praise group rated the student as less controlled ($M = 5.12$, $SD = 1.32$) than participants who read the meaning token ($M = 3.88$, $SD = 1.25$, $d = 1.36$) scenarios. There was no main effect of program or reward type. On the item that asked if the student in the scenario felt like she had control, participants who read the meaning-based scenario indicated that the student had more control ($p < .001$, $d = 1.56$) than participants who read the direct instruction scenarios. Participants who read the meaning-based scenarios rated the student in the as having more choice ($p = .002$, $d = 0.84$) than those who read the direct scenarios. There was no main effect of reward type or interaction.

ANOVAs on the reward type and reward contingency in the direct program indicated significant main effects on one of the single Likert items. There was a significant main effect of reward on the explicit item, $F(1, 55) = 14.46, p < .001$. There were no interaction effects on any of the single Likert items. Participants who read the token scenarios ($M = 5.36, SD = 1.56$) rated the rewards as more explicit than those who read the praise scenarios ($M = 3.73, SD = 1.61, d = 1.18$).

Internal and external attribution items

Two additional bipolar Likert items were added to the questionnaire to assess whether participants attributed the student in the scenario's performance to internal and external sources. These items were analyzed separately from the other attribution items because they were measured differently. There were no significant main effects or interaction effects on these items. However, a marginally significant effect, $F(1, 54) = 3.79, p = .057$, of reward type was noted on the item asking whether the student in the scenario's performance was reflected as an aspect of the student or the situation. Participants who read the praise scenario attributed the student's performance more to internal factors ($M = 4.20, SD = 1.41$) than participants who read the token scenarios ($M = 3.45, SD = 1.48, d = 0.52$).

Credit items

Three Likert items (i.e. Jennifer deserves credit for her accomplishments) were combined into a composite measure. Analyses on the credit composite indicated that there was a significant main effect of reward, $F(1, 60) = 5.64, p = .021$. Participants in the praise conditions ($M = 6.26, SD = .78$) rated the student in the scenario as deserving more credit than participants in the token scenarios (*M* = 5.70, *SD* = .99, *d* = 0.63). There was no main effect of program and no interaction effect.

Participants were also asked whether the teacher, teaching assistant, or Jennifer deserved the least credit for improvements in Jennifer's reading performance. A chi square test of independence on the item asking participants to choose who deserves the least credit for improvements in Jennifer's reading performance indicated a significant effect of reward $x^2 = (1, N = 84) = 4.32, p = .038$. Comparison of the percentage of participants assigning the credit to the teacher (as opposed to Jennifer or the teaching assistant) for token versus the praise rewards indicated 64 percent gave the least credit to the teacher in the token condition and 85 percent assigned the least credit to the teacher in the praise condition. Participants always gave the teacher less credit than the teaching assistant or Jennifer, but the withdrawal of credit from the teacher was considerably enhanced in the praise program. In addition, participants who read the token scenario indicated that the student in the scenario deserved the least credit (15.6 %) compared to 5.1 % of participants who read the praise scenario. That is, when participants read a scenario with a token reward, they viewed the student as deserving less credit than participants who read the praise scenario. Results are presented in Table 5.3. There was no significant effect of program on the item that asked participants who deserved the most or least credit. There was also no significant effect of reward type on the item asking participants who deserves the most credit.

Likelihood items

Two by two ANOVAs of program by reward type indicated a statistically significant main effect of program on the likelihood that Jennifer will read without errors, *F*(1, 60) = .047, *p* = .047. Participants who read the direct instruction scenarios rated Jennifer as more likely to read without errors (*M* = 52.76, *SD* = 20.68) than participants who read the meaning-based scenarios (*M* = 41.71, *SD* = 21.89, *d* = 0.52). There was no main effect of reward and no interaction of program by reward on this item. A significant main effect of reward was found on the item that asked participants about the likelihood that the student in the scenario (Jennifer) would become an avid reader, *F*(1, 59) = 5.64, *p* = .021. Participants who read the praise scenarios (*M* = 50.65, *SD* = 21.28) rated the student in the scenario as more likely to become an avid reader than participants who read the token scenarios (*M* = 38.16, *SD* = 19.41, *d* = 0.61). There were no main effects of program or any significant interaction effects. There were also no significant differences on the likelihood that the program will result in Jennifer improving her reading, the likelihood that Jennifer will read at grade level, and the likelihood that Jennifer will read in the summer just for fun.

ANOVAs on reward type and reward contingency in the direct instruction scenarios indicated no significant main effects of reward type or reward contingency on any of the items. An examination of Figure 5.5 shows that, on the item that asked the likelihood that the student in the scenario will read for fun, there was a significant interaction of reward type by reward contingency for those who read the direct program scenarios, *F*(1, 55) = 4.56, *p* = 0.037. Participants who read the token

/ performance standard (*M* = 47.22, *SD* = 22.44) rated the student in the scenario as more likely to read in the summer than participants who read the token / no performance standard (*M* = 31.33, *SD*=21.34, *d* = 1.03); those in the praise / no performance standard condition (*M* = 43.57, *SD* = 22.40) indicated that the student was more likely to read in the summer than those who read the praise / performance standard (*M* = 33.33, *SD* = 27.41, *d* = 0.58) scenarios.

Intrinsic motivation

Two by two ANOVAs of program by reward type in the scenarios without performance standards indicated that there was a statistically significant effect of reward type on the intrinsic motivation scale, *F*(1, 55) = 4.56, *p* = .037. Participants who read the praise scenarios rated Jennifer as more intrinsically motivated (*M* = 3.45, *SD* = 1.38) than participants who read the token scenarios (*M* = 2.74, *SD* = 1.34, *d* = 0.52). There was no main effect of program or interaction effects of program by reward. In the direct program, there were no significant main effects of reward type or reward contingency and no interaction effects.

Discussion

The third study was designed to test the same hypotheses from Studies 1 and 2 with practicing classroom teachers. Many of the results from Study 3 are consistent with the first two studies. For example, participants who read the meaning-based scenario rated the teaching procedures as more autonomy-supportive; they also rated the student in the scenario as feeling more valuable, self-determined, and more motivated than participants who read the direct scenarios. These effects were lessened when a token reward was included. However, some interesting differences were also noted. In particular, several interactions were identified that were not apparent in the first two studies. An examination of contrasts indicated that participants in the direct token rated the teaching procedures as more explicit than the other three conditions. In addition, participants in the meaning praise condition rated the student in the scenario as feeling more autonomous, motivated, competent, and less controlled than participants who read the other scenarios. This result was not expected.

The third study also tested theoretical hypotheses based on attribution theory, self-determination theory, and Skinner's behavioral theory. It was predicted that participants in the direct instruction conditions would attribute student performance to external factors, while participants in the meaning-based scenarios would attribute student performance to internal factors. Unlike the previous two studies, this hypothesis was not supported. There was no difference in attributions when participants were given a meaning-based or direct scenario. However, participants were also expected to attribute performance more to internal factors when praise, rather than a token, was given as a reward. This hypothesis was supported. Participants in the praise scenarios attributed the student's performance more to internal factors than participants in the token scenarios.

Self-determination theory (SDT) contends that when instructional procedures are explicit, (i.e. use direct teaching procedures, tangible rewards, performance standards) teachers will view the procedures as controlling. Participants who read the meaning-based scenario indicated that the student in the scenario felt like she had more control than participants in the direct teaching scenario. However, participants in the direct token and meaning praise scenarios rated the student as less controlled than participants who read the direct praise and meaning token scenarios. Based on SDT, when teaching and reward procedures are viewed as controlling, participants would infer that the student in the program will feel less autonomous, less competent, less intrinsically motivated, and less self-determined. This hypothesis was generally confirmed. In addition, participants in the no performance standard scenario also rated the reward procedures as more motivating, fair, and autonomy-supportive than participants in the performance standard conditions. However, SDT would predict that a student would perform better in a classroom that is less controlling and more autonomy supportive. Findings from this study suggest that there was no difference in perceptions of performance. In fact, consistent with the second study, participants rated the likelihood of the student reading without errors as significantly higher in a direct teaching program.

Based on Skinner (1971), it was hypothesized that participants would give less credit to the student in the program that used direct teaching procedures and tangible rewards as there is an obvious cause for the student's performance. This was partially confirmed when examining reward type. Participants who read the token scenarios gave less credit to the student than participants who read the praise scenarios. Program type did not appear to impact teacher's perceptions of credit. It was also hypothesized, based on Skinner's views, that participants would perceive the student's self worth as threatened in a program with explicit contingencies. This finding was partially supported as participants perceived the student as feeling more valued in the meaning-based and praise scenarios compared to the direct instruction and token scenarios.

Overall, many of the results from the previous two studies were confirmed. However, there are some aspects that differed between pre-service and practicing teachers. In particular, teachers rated the teaching procedures in the direct token scenarios as more explicit than participants in the other three scenarios. This initial finding appears to have impacted subsequent ratings. Regardless, teachers did identify impacts of program type, reward type, and reward contingencies on perceptions of autonomy, intrinsic motivation, and self-worth.

Table 5.1.

Perceptions of the Reward Procedures Portrayed in the Scenarios (means and standard deviations)

Reward Procedures	Token	Praise	Direct	Meaning-Based
Explicit	1.69 (.95)a	.51 (1.21)b	1.03 (1.25)	1.21 (1.22)
Autonomy-supportive	-.45 (1.26)a	.91(1.24)b	-.23 (1.55)a	.56(1.20)b
Fair	.82 (1.11)a	1.77(1.13)b	1.23 (1.10)	1.29 (1.31)
Motivating	1.32 (1.20)	1.83 (1.15)	1.57 (1.17)	1.56(1.24)

Note. Means followed by different superscripts indicate statistically significant differences ($p < .05$).

Table 5.2

Single Likert Items (means and standard deviations)

Likert Items	Direct	Meaning -based	Token	Praise	Main Effect of Program F and p values	Main Effect of Reward Type F and p values	Interaction
There are explicit incentives to read.	4.34 (1.84)	4.74 (1.56)	5.15 (1.48)	3.94 (1.69)	F(1, 60)=1.08 p=.304	F(1,60)=9.87 p =.003	F(1,60)=.91 p=.344
Jennifer felt controlled.*	3.57 (1.40)	4.50 (1.38)	3.81 (1.25)	4.35 (1.60)	F(1, 58)=7.54 p<.008	F(1,58)=1.97 p =.166	F(1, 58)=5.06 p=.028
Jennifer is motivated.	4.10 (1.32)	4.88 (1.45)	4.22 (1.39)	4.84 (1.44)	F(1, 59)=4.88 p=.031	F(1, 59)=2.94 p=.092	F(1, 59)=.10 p=.759
Jennifer's performance is self-determined.	3.93 (1.75)	4.88 (1.25)	4.00 (1.50)	4.90 (1.51)	F(1, 59)=6.55 p=.013	F(1, 59)=5.64 p =.021	F(1, 59)=.26 p=.613
Jennifer felt like she had control.	3.41 (1.44)	5.44 (1.08)	4.06 (1.63)	4.97 (1.49)	F(1,59)=43.73 p<.001	F(1, 59)=8.38 p =.005	F(1, 59)=.14 p=.706
Jennifer's self worth is lessened.*	4.83 (1.67)	5.46 (1.44)	5.03 (1.57)	5.32 (1.58)	F(1, 60)=2.67 p=.108	F(1, 60)=.436 P = .511	F(1, 60)=.75 p=.389
Jennifer is able to read because of effort.	4.90 (1.37)	5.35 (1.15)	4.75 (1.37)	5.55 (.96)	F(1,59)=2.18 p=.145	F(1,59)=7.66 p =.008	F(1, 59)=1.39 p=.244
How well will Jennifer be reading.	4.97 (.91)	4.57 (1.27)	4.64 (.93)	4.87 (1.31)	F(1, 60)=1.97 p = .166	F(1, 60)=.75 p =.39	F(1, 60)=.12 p=.73
Jennifer's future feelings of reading competence.	4.41 (1.12)	4.59 (1.23)	4.28 (1.05)	4.74 (1.26)	F(1,.59)=.31 p=.583	F(1, 59)=2.46 p =.122	F(1, 59)=.15 p=.703
Jennifer had choice.	1.79 (1.05)	2.94 (1.67)	2.79 (1.78)	2.00 (1.05)	F(1, 59)=10.55 p=.002	F(1, 59)=4.53 p =.037	F(1, 59)=2.84 p=.098

* Indicates that the item was reverse scored.

Table 5.3.

Crosstab for item asking participants who deserves the least credit for improvements in Jennifer's reading performance.

Reward Type	Teacher	TA	Jennifer
Token	64.4%	20.0%	15.6%
Praise	84.6%	10.3%	5.1%

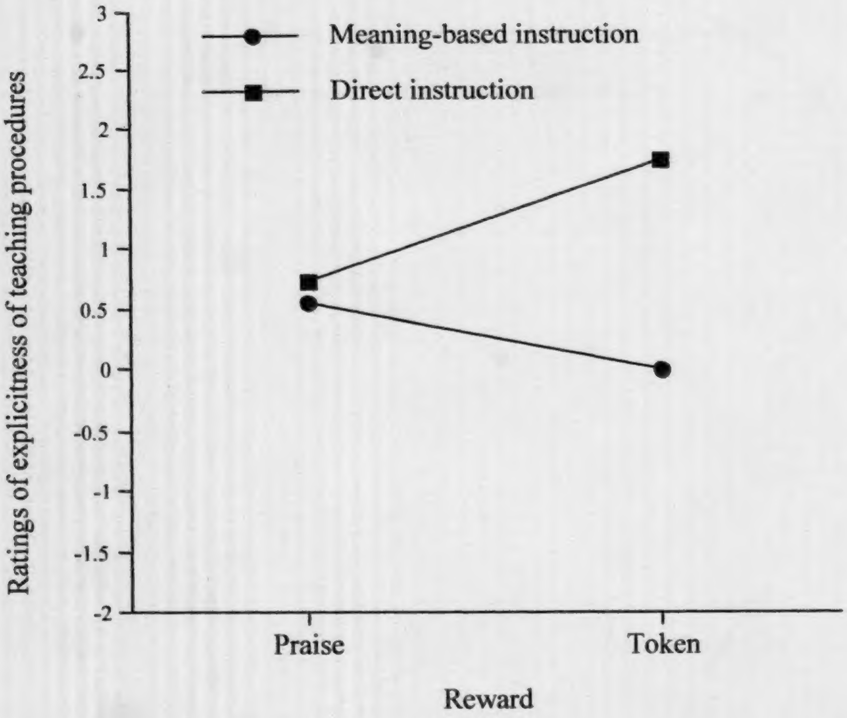

Figure 5.1. Interaction between program type and reward type on ratings of explicitness of teaching procedures.

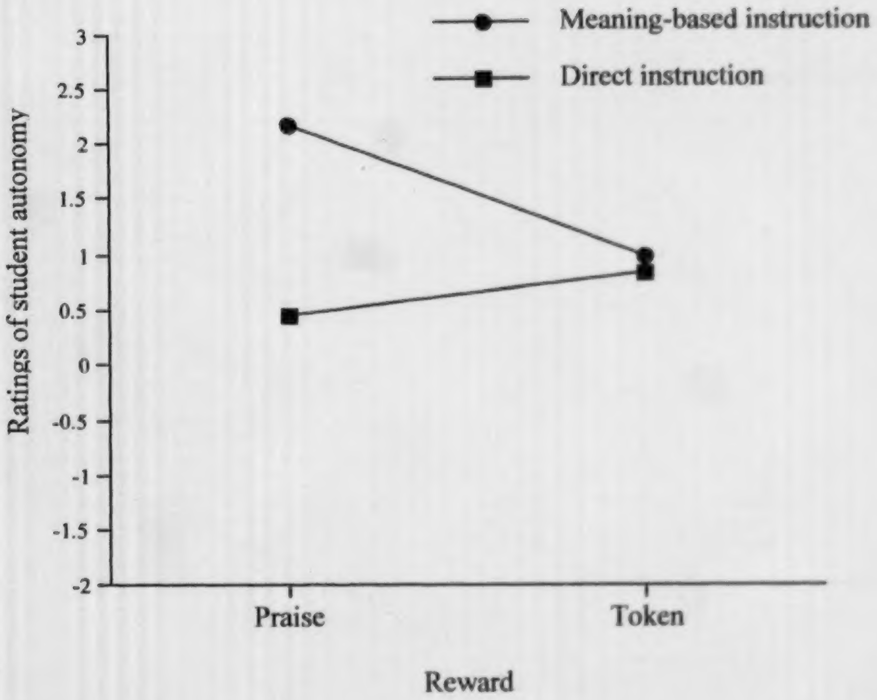

Figure 5.2. Interaction between program type and reward type on ratings of student autonomy.

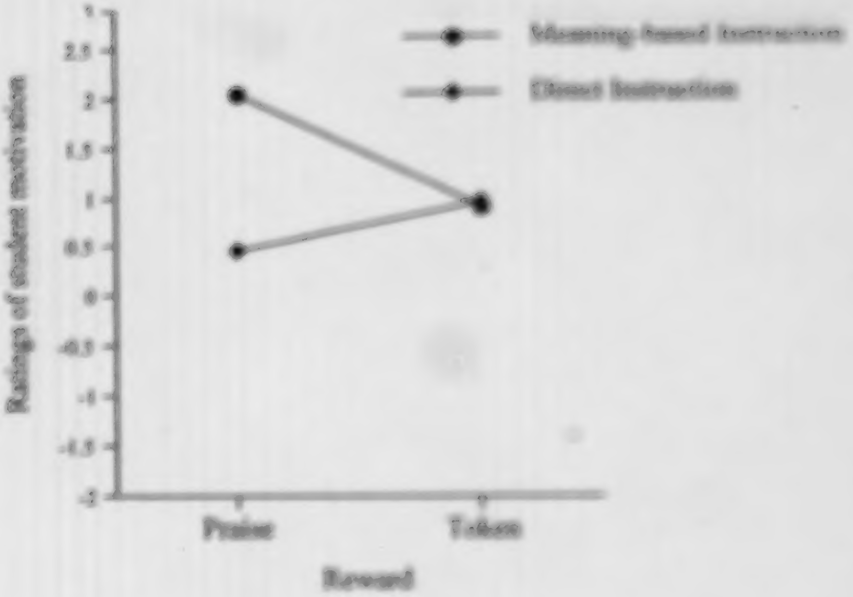

Figure 5.3. Interaction between program type and reward type on ratings of feelings of student motivation.

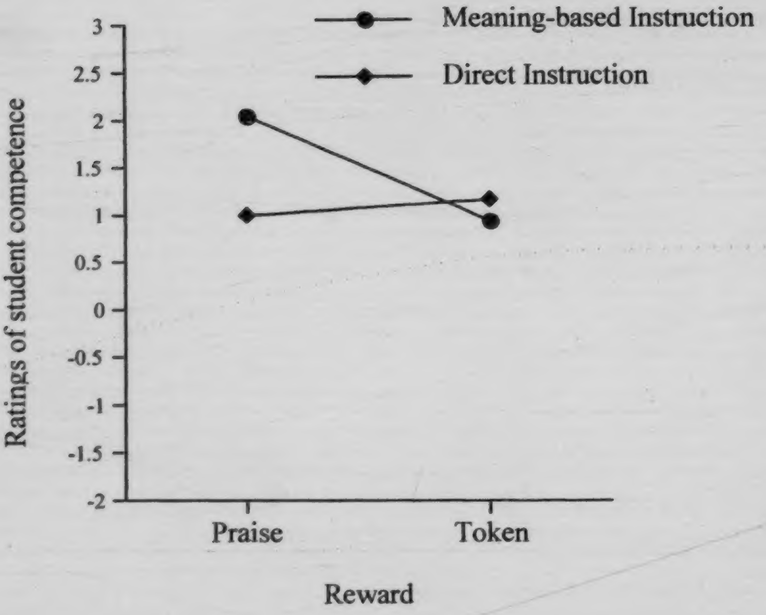

Figure 5.4. Interaction between program type and reward type on feeling of student competence.

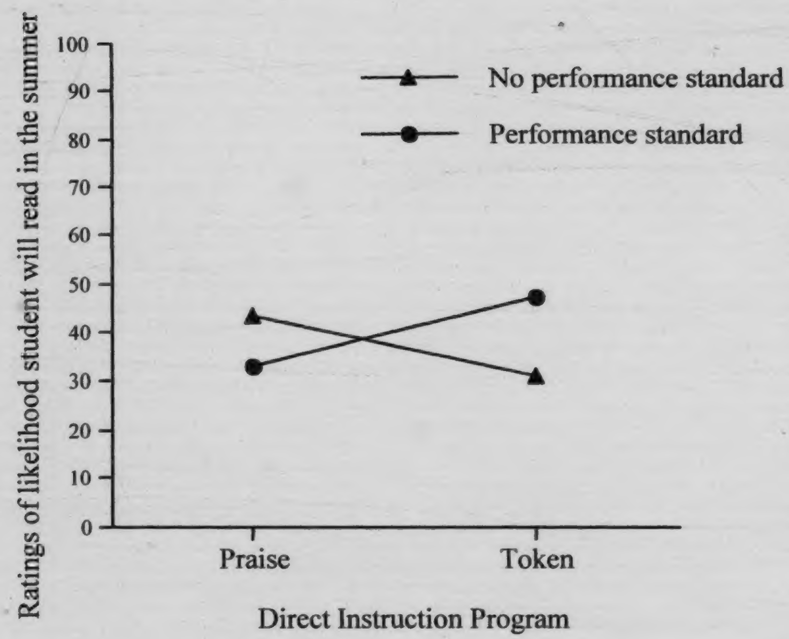

Figure 5.5. Interaction between reward type and reward contingency on the likelihood the student in the scenario will read in the summer.

Chapter 6

Path Models of Findings from Study 2 and Study 3

A major aim of the present research was to assess the cognitive processes that mediate the effects of the teaching procedures described in the vignettes on participants' ratings of a student's intrinsic motivation and attribution of credit. To construct path models, hypotheses based on self-determination theory (SDT), attribution theory, and Skinnerian behavioral theory were developed.

Credit and Intrinsic Motivation: Mediation Hypotheses

Based on SDT, it was hypothesized that participants who rated the teaching procedures as explicit would rate the procedures as less autonomy-supportive. That is, there would be a negative relationship between explicitness and autonomy support. Ratings of the teaching procedures also were hypothesized to impact ratings of self-determination and ratings of internal attributions of the student. When teaching procedures were rated as low on explicitness, and, in turn, high on the autonomy-supportive scale, participants were expected to rate the student as being more self determined. This would lead teachers to attribute performance more to internal factors. As well, low ratings of self-determination and internal attribution were expected to lead to low ratings of intrinsic motivation.

Attribution theory predicts that teachers will attribute performance more to internal factors when the teaching procedures are seen as less explicit and less controlling (autonomy supportive). When teachers attribute performance to internal factors, they will see the student as more self determined and intrinsically motivated. In turn, from a behavioral view, when there is not an explicit cause for behaviour, teachers will attribute performance to internal factors. From this perspective, low ratings of internal attributions will lead teachers to give less credit to the student. On the other hand, when performance is attributed to internal factors, students would be given more credit.

Measures Used for Path Analysis

Path analysis is a method developed by Wright (1921, 1934) to examine the modelled direct and indirect effects of variables hypothesized on the basis of theoretical considerations. To construct path models for Studies 2 and 3, measures were based on how explicit participants rated the teaching procedures, how autonomy-supportive the teaching procedures were rated, perceptions of self determination, ratings of internal attributions, intrinsic motivation, and amount of credit given to the student in the program.

Three bipolar items (clear / vague, visible / unnoticeable, glaring / hidden) made up the explicitness of teaching procedures index and the autonomy-supportiveness of teaching procedures (self-initiating / controlling, flexible / authoritative, unconstraining / coercive). The measure of internal attributions was made up of four 6-point Likert items that ranged from strongly agree to strongly disagree (Jennifer's success (or failure) in the reading program was due to effort / ability / motivation / interest). Five, 7-point Likert items (1=Strongly Disagree to 7 = Strongly Agree) made up the self-determination scale (Jennifer read because she chose to, because she felt she had to, because she was pressured, because she wanted to, and because she was pursuing her own goals). Three Likert items (Jennifer deserves credit for her accomplishments, Jennifer should be commended for her reading performance, and Jennifer should be acknowledged for her performance in the reading program) were combined into a composite measure of credit assigned to the student. The intrinsic motivation scale was made up of three items (Jennifer will read each day of her summer holidays, Jennifer will be motivated to read during her summer holidays, and Jennifer will enjoy reading in the summer).

Correlations among Measures

The first step to creating the path models was to inspect the simple correlations among the composite measures. Table 6.1 presents the correlation matrices of the measures for Study 2. The index of explicitness of the teaching procedures showed a significant negative correlation with the autonomy-supportive measure, but was unrelated to other variables in the model. Table 6.1 also indicates significant correlations among all other composite variables for Study 2.

Table 6.2 presents the correlation matrix of the measures used in Study 3. The findings are similar to Study 2. However, the correlations between credit and autonomy-supportiveness of teaching procedures, and between credit and ratings of self determination and ratings of intrinsic motivation, were not significant in Study 3.

Path Models

AMOS software (Arbuckle, 2003) was used to calculate the path model and paths with nonsignificant coefficients were removed. For example, the path between ratings of self determination and credit had a nonsignificant coefficient (.02) and was trimmed from the model. The final path model for Study 2 is presented Figures 6.1. The model was an adequate fit, x^2 (8) = 11.4, *p* = .18. Goodness-of-fit indices supported the conclusion; the root-mean-square error of the approximation (RMESA) was .059

The final path model for Study 3 is presented in Figure 6.2 and was also considered an adequate fit, $x^2 = (8) = 10.3$, $p = .24$. The RMSEA was .068 for Study 3. Gierl & Rogers (1996) have suggested that the values for the RMESA less than .08 indicate a reasonable fit for the model.

Figure 6.1 indicates a significant negative relationship between explicitness of teaching procedures and ratings of autonomy-supportive teaching procedures. That is, participants who rated the teaching procedures as more explicit then rated the procedures as less autonomy supportive. Additionally, the autonomy-supportiveness of the teaching is significantly and positively related to internal attributions for performance, and ratings of the student's self determination. Internal attributions were also positively related to ratings of self determination. Ratings of internal attributions for performance significantly influence the amount of credit given to the student and the ratings of intrinsic motivations. Ratings of self-determination affected ratings of intrinsic motivation. The path model for Study 3 is presented in Figure 6.2. The same relationships were found for Study 3 as for Study 2. However, effects were stronger for pre-service teachers (Study 2) than for practicing teachers (Study 3).

Mediating variables

The measures that mediate the effects of teaching procedures on attributions of credit and assessment of intrinsic motivation are of particular interest. In path-analytic terms, these are the indirect effects previously described. Baron and Kenny

(1996) have argued that correlations are not sufficient to determine mediation; mediation occurs when there is a reduction of the direct effect of the predictor variable on the outcome, after controlling for the presumed mediator (indirect effect). Sobel (1982) provides a test statistic that is used to test mediation from path models. After fitting the path model, mediation is established using the regression weights of the paths (a → b) and the relevant standard errors (S_a and S_b). The Sobel test of mediation involves dividing the product of the regression weights a and b by the square root of $b^2S_a^2 + a^2S_b^2$. The Sobel test is treated as a Z test (i.e., values larger than 1.96 are significant at the .05 level).

The Sobel (1982) test statistic was calculated for each path to determine which variables in Figures 6.1 and 6.2 mediated the relationships between teaching procedures and ratings of credit and intrinsic motivation. The results of the mediation analysis for Study 2 are presented in Table 6.3.

An examination of Table 6.3 shows that the impact of explicitness of teaching procedures on internal attributions of performance and self-determination is mediated by participant's perceptions of the autonomy supportiveness of teaching procedures. In addition, ratings of internal attributions (student performance due to internal factors) mediated the effect of autonomy support on intrinsic motivation and assignment of credit. Furthermore, ratings of the student's self determination mediated the relationship between autonomy supportiveness of teaching procedures and assessment of intrinsic motivation. That is, participants who viewed the procedures as autonomy supportive attributed the student's performance to internal factors. Internal attributions led the participants to give the student credit for performance and to view the student as highly intrinsically motivated. As well, high ratings of autonomy support led participants to view the student as self determined. The same significant mediating relationships were found for Study 3 and are presented in Table 6.4.

Theoretical Implications of the Findings

Many of the theoretical predictions were confirmed by the path analyses. Consistent with self-determination theory, the explicitness of the teaching procedures was negatively related to inferences about how autonomy supportive the teaching procedures were. SDT also predicts that assessed feelings of autonomy affect perceptions of self-determination and assignment of performance to internal factors (internal attribution). Self-determination in turn should impact judgments of intrinsic motivation. The path models provide support for these predictions. Teachers' inferences about the impact of the teaching procedures (autonomy-supportiveness) mediated the impact of perceptions of self-determination, and internal attributions, as expected. Furthermore, inferences about self-determination mediated the impact of teaching procedures on intrinsic motivation, indicating that perception of intrinsic motivation depends on inferences of self-determination, as required by SDT.

Attribution theory gains partial support from the findings based on path analyses. Teachers were expected to attribute the student's performance to internal causes when teaching procedures were less explicit. However, the relationship between explicitness of teaching and internal attributions was mediated by perceptions of the autonomy-supportiveness of the teaching procedures. This relationship is not predicted by attribution theory.

The findings also provide some support for Skinner's behavioral theory. The theory predicts that the explicitness of teaching should influence inferences about the causes of the student's performance (i.e. internal vs. external attributions). In turn, these factors were expected to determine the amount of credit given to the student. In both studies, internal attributions mediated the relationship between autonomy-supportive ratings and credit given to the student. Another prediction of behaviour theory was that practicing teachers would make external attributions for performance, assigning the student's reading improvement to teacher. However, external attribution did not operate as a significant mediator and was not retained in the path models.

In sum, a goal of the present research was to test path models based on predictions from several theories of cognition and performance. Mediating variables were identified that link judgments about teaching procedures (explicitness and autonomy-supportiveness) to inferences about intrinsic motivation and assignment of credit or worth. The results provide insight into the reasoning processes of teachers as they make instructional decisions.

Table 6.1. Correlations among Ratings Impacted by Teaching Procedures in Study 2.

Variables	1	2	3	4	5	6
1. Explicitness of teaching procedures	---	-.38**	.00	.05	-.06	-.16
2. Autonomy supportive teaching procedures		---	.44**	.26**	.58**	.46**
3. Intrinsic Motivation			---	.30**	.77**	.55**
4. Credit				---	.38**	.52**
5. Self determination					---	.57**
6. Internal Attributions						---

Note.**p < .001.

Table 6.2. Correlations among Ratings Impacted by Teaching Procedures in Study 3.

Variables	1	2	3	4	5	6
1. Explicitness of teaching procedures	---	-.37**	.10	.15	.01	-.05
2. Autonomy supportive teaching procedures		---	.28**	.07	.45**	.34**
3. Intrinsic Motivation			---	.05	.58**	.46**
4. Credit				---	.17	.29**
5. Self determination					---	.49**
6. Internal attributions						---

Note.**p < .001.

Table 6.3. Z and p values for Indirect Paths of Path Model for Teaching Procedures on Ratings of Credit and Intrinsic Motivation for Study 2.

Paths	Z values	p values
TP Explicit → TP Autonomy supportive → Self determination	-3.20	<.001
TP Explicit → TP Autonomy supportive → Internal attribution	-3.28	<.001
TP Autonomy supportive → Self determination → Intrinsic motivation	4.31	<.001
TP Autonomy supportive → Internal attributions → Intrinsic motivation	2.24	0.03
TP Autonomy supportive → Internal attribution → credit	3.94	<.001

Note. TP = teaching procedures

Table 6.4. Z and p values for Indirect Paths of Path Model for Teaching Procedures on Ratings of Credit and Intrinsic Motivation for Study 3.

Paths	Z values	p values
TP Explicit → TP Autonomy supportive → Self determination	-2.47	<.001
TP Explicit → TP Autonomy supportive → Internal attribution	-2.60	<.001
TP Autonomy supportive → Self determination → Intrinsic motivation	2.73	<.001
TP Autonomy supportive → Internal attributions → Intrinsic motivation	1.86	.05
TP Autonomy supportive → Internal attribution → credit	2.28	.02

Note. TP = teaching procedures

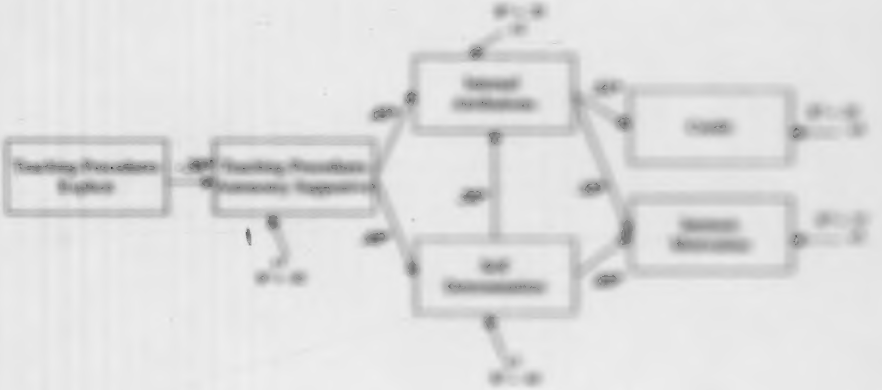

Figure 6.1. Path model for Study 2.
Note. Path coefficients represent standardized estimates. *e* = error term. * *p* < .05.

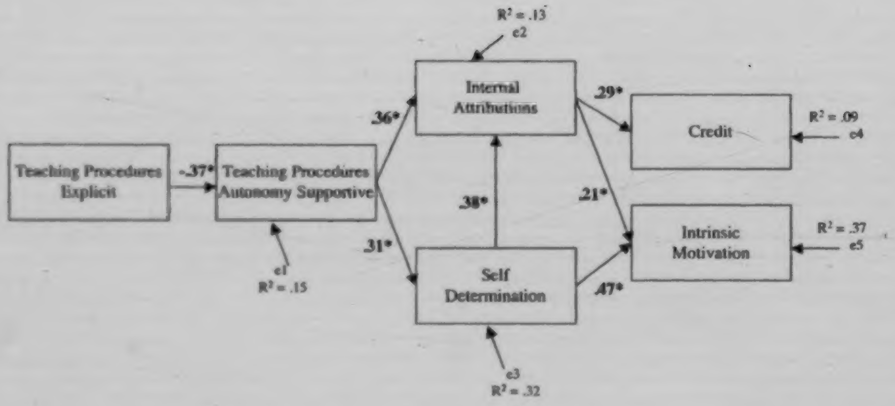
R² = .13
e2
Internal Attributions
.29*
Credit
R² = .09
e4
.36*
Teaching Procedures Explicit
-.37*
Teaching Procedures Autonomy Supportive
.38*
.21*
Intrinsic Motivation
R² = .37
e5
.31*
e1
R² = .15
Self Determination
.47*
e3
R² = .32

Figure 6.2. Path model for Study 3.
Note: Path coefficients represent standardized estimates. e=error term. *p<.05

Chapter 7

General Discussion

The purpose of this research was to examine teachers' judgments of programs that use direct teaching methods versus meaning-based methods to teach reading. The research also investigated teachers' perceptions of the use of incentives in reading programs. Results indicated that when pre-service and practicing teachers rated scenarios as more explicit (i.e. programs that used direct teaching procedures and tangible rewards), they rated the teaching procedures as less autonomy-supportive, less intrinsically motivating, and more controlling than teachers who read the scenarios with less explicit teaching procedures (i.e. programs that used meaning-based teaching procedures and praise). These responses were augmented when the program included the use of tangible rewards. Despite their ratings, teachers acknowledged that the student in the scenario had a better chance of improved performance when direct teaching procedures were used. This is consistent with the substantial amount of reading research that indicates that the most effective instructional programs use explicit teaching methods to teach reading (Carnine, Silbert, & Kame'euni, 2004).

A further goal of the research was to assess the cognitive processes that mediate the effects of the teaching procedures on ratings of the student's intrinsic motivation and attribution of credit. Path analyses showed that the impact of the explicitness of teaching procedures on internal attributions and self-determination was mediated by participant's judgments about the autonomy supportiveness of the teaching procedures. In other words, the explicitness of the teaching procedures had an indirect effect on ratings of internal attributions and self determination. In addition, ratings of internal attributions mediated the effect of judgments about the autonomy supportiveness of the teaching procedures on assignment of credit and ratings of intrinsic motivation. Furthermore, ratings of the student's self-determination mediated the impact of inferences about the autonomy supportiveness of the teaching procedures and assessment of intrinsic motivation. In other words, participants who rated the teaching procedures as more explicit rated the procedures as less autonomy supportive. The autonomy-supportiveness of the teaching procedures was significantly related to internal attributions and ratings of self determination. Finally, the ratings of internal attributions influenced amount of credit given to the student and ratings of intrinsic motivation; ratings of self determination affected ratings of intrinsic motivation. These results were consistent in Studies 2 and 3 (no path analyses were conducted for Study 1).

Theoretical Implications

Self-Determination Theory. According to self-determination theory (SDT) (Ryan & Deci, 2000), when instructional methods are explicit, teachers are expected to label the program as controlling. Tangible rewards would also be seen as providing an element of control. In accord with these predictions, direct teaching procedures were rated as more controlling in all three studies. There was some support that token rewards were more controlling than praise. However, participants did not view performance standards as more controlling than scenarios that did not have performance standards. An extension of SDT further suggests that participants would infer that the student in the programs with high control would feel less autonomous, competent, intrinsically motivated, and self-determined. That is, perceptions of the student's self esteem would be impacted. This hypothesis was confirmed in all three studies.

The path analyses indicated that the explicitness of the teaching procedures was negatively related to inferences about how autonomy-supportive the teaching procedures were. In addition, programs judged as explicit and low in autonomy support led teachers to infer low self determination and low intrinsic motivation. Also, as hypothesized by SDT, perceptions of intrinsic motivation were dependent on inferences of self-determination. That is, when teachers rated the teaching procedures as more autonomy supportive, they also rated the student as more intrinsically motivated.

SDT would predict that a student would perform better in classes with less control and more autonomy. Participants in the present studies, however, consistently rated the likelihood of improved student performance as significantly higher in the direct teaching program. In other words, although teachers viewed direct programs as more controlling and indicated that students in such programs would be less autonomous, self-determined and motivated, direct teaching methods were rated as more effective. These findings suggest that inferences about self-determination and intrinsic motivation are inconsistent with inferences about program effectiveness.

Attribution Theory. According to attribution theory, (Heider, 1958; Kelley, 1967; Weiner, 1980, 1985) observers were expected to attribute performance to internal factors rather than external factors when there were few explicit external causes for behaviour. Direct instructional procedures and token rewards were rated as more explicit in all three studies. The meaning-based scenarios did not include explicit external causes for behaviour.

In Studies 1 and 2, participants who read the meaning-based scenario attributed the student's performance more to internal factors than those in the direct teaching condition. The results also showed that participants in the direct instruction condition attributed performance more to external factors. In Study 3, participants in the praise scenario attributed the student's performance more to internal factors than participants in the token scenarios. These results suggest that when there are few explicit causes for improvements in reading, student achievement will be attributed to internal factors by teachers. This is consistent with attribution theory.

It was also predicted, based on attribution theory, that attributions teachers make about students in different types of instructional programs influences the amount of credit given to students. Results from the path analyses indicated that, when performance was attributed to internal causes, participants gave more credit to the student. This was not found for teachers who read scenarios describing programs using direct instructional procedures and token rewards.

Skinner's Behavioral Theory. Extending Skinner's (1971) thesis from *Beyond Freedom and Dignity* to the present studies, it was hypothesized that observers would give less credit to an individual when performance was due to obvious contingencies of reinforcement. In the present research, the direct instruction and token rewards served as an obvious cause for performance. In Studies 1 and 2, the student in the direct program was given less credit by the participants. In Study 3, teachers who read the token scenarios gave less credit to the student than participants who read the praise scenario. These findings are in accord with Skinner's views and suggest that when there are obvious causes for behaviour (i.e. reading), students are given less credit for their accomplishments.

It was also predicted that participants would view a student's self worth as threatened in programs with explicit contingencies. This was supported in all three studies. That is, preservice and practicing teachers judged students as feeling less worthy in the direct instruction programs. In addition, the path analyses confirmed that the explicitness of teaching procedures influenced inferences about the how autonomy supportive the teaching procedures were and causes of the behaviour (internal vs. external attributions). In turn, participants viewed the student as more autonomous and less controlled when there were less obvious causes for behaviour. They also attributed performance more the internal factors. This determined the amount of credit given to the student.

Consistent with Skinner's theory, when the teaching and reward procedures were more conspicuous (direct instruction and token rewards), perceptions of the student's autonomy was rated as low, performance was attributed to external causes, the student was seen as having less self worth or dignity, and less credit was given to the student for performance. Skinner's views support many of the hypotheses outlined by attribution theory and self determination theory. One critical distinction is that Skinner sees these perceptions as myths. Skinner disagreed with the notion that there is such thing as an autonomous human. He argued that the environment provides some element of control. Therefore, in educational settings, students benefit from planned interventions, such as those used in direct teaching methods, so that the environment positively reinforces learning.

As Skinner pointed out, in Western cultures, people uphold the ideals of freedom from control and autonomous action. When people's performance is seen as caused by external forces, they are not given credit for their actions. The result is a loss of dignity for the individual. Given the importance of freedom and dignity in Western Culture, the results from the present research suggest that successful teaching methods such as direct instruction are not being used in classrooms because they are seen as controlling; achievements on the part of students are not viewed as emanating from the individuals themselves.

Limitations

This research has limitations and delimitations that should be acknowledged. First is the sample. This study was conducted with pre-service teachers and Alberta school teachers who volunteered at an Alberta Teachers Convention. The pre-service teachers likely were presented with similar coursework in regards to teaching children how to read. Therefore, one needs to be careful about generalizing to all preservice teachers. In addition, there is the possibility that only a certain type of teacher agrees to participate in this type of research. Therefore, the results may not be reflective of all practicing teachers. However, it is important to note that results were similar with preservice and practicing teachers; this lends support to external validity.

Second, research using scenarios does have its limitations. A major concern is that teachers may respond to scenarios in a different way then they would actually instruct in their classroom. Social desirability may become an issue since direct teaching procedures and the use of rewards is looked down upon in some school districts. That is, teachers may not report supporting programs using these techniques because there has been negative publicity in these areas, even though the negative publicity is not supported by research.

In addition, the experimental design for Studies 2 and 3 was not a complete 2x2x2 design. A true design would include eight scenarios. A meaning-based program with a performance standard for rewards was not included in the present research because performance standards are not used in such programs. Meaning-based programs used to teach reading define reading in such a way that the meaning of the text is most important. That is, it is acceptable for a student to make errors when reading as long as the text still has meaning. Therefore, students are praised for reading, regardless of errors, in the meaning-based scenario. In the direct scenarios, tangible rewards and praise are given after reaching a performance standard (reading a certain number of pages without errors). The decision to use an incomplete design was made because direct teaching programs dictate that mastery of reading is an essential part of the instructional procedures. If a complete design were used, the impact of all extraneous variables (i.e. the use of a performance standard) could be partialled out and more comparisons could be made. However, to reflect the reality of teaching reading procedures, some cells were omitted.

Finally, a delimitation is that the research was not designed to determine whether reported differences in teacher perceptions influence their behaviour in the classroom. A possible follow-up study could involve teachers and pre-service teachers watching video tapes of actual teachers teaching reading. Then, participants could rate the teaching on a wide range of measures (i.e. explicitness of teaching procedures, amount of credit given to students) to determine perceptions of teaching and reward procedures.

Practical Implications

The current research provides insight into the cognitive processes that teachers undertake when making instructional decisions. The studies suggest that judgments about the explicitness of the teaching procedures and the autonomy supportiveness of the teaching procedures impact judgments about the student and, ultimately, the amount of credit the student receives for his/her performance in the program. Understanding the relationship between these variables can help to understand how teachers decide to instruct students in their class.

Results from the current research suggest a possible explanation for why proven methods to teach reading are not widely implemented. Research on reading shows that students make the most progress in programs that use explicit teaching procedures. These findings are recognized by pre-service and practicing teachers. However, teachers continue to view direct instruction programs as controlling and detracting from students' feelings of autonomy, self-worth, and self-determination. Ultimately, this attitude impacts students' intrinsic motivation and the amount of credit students are given for their accomplishments. One implication of the findings is that the inferences teachers make influences their behaviour toward students, choice of teaching methods, and procedures in the actual classroom. That is, teachers may choose indirect, and less effective teaching procedures because they view such teaching procedures as less controlling and more intrinsically motivating to students. On the other hand, teachers may use direct teaching procedures, but give students less credit for the gains that they are making. This is particularly concerning given the fact that many struggling readers require direct instructional approaches to learn to read.

Given the emphasis of Western culture on freedom, self-determination, and feelings of self worth, it is likely that teachers will continue to adopt meaning-based programs even while recognizing improvements in reading are more likely to occur in direct instruction programs. In Fitzgerald's 1999 article on balanced instruction, the author stated that the reason for the current popularity of balanced literacy was not immediately evident. The current research provides some insight into the popularity of this approach. Teachers may be drawn to reading programs that highlight elements of meaning-based approaches as they see them more autonomy-supportive and intrinsically motivating. However, there is little evidence of what elements are required to develop an effective 'balanced' program. One solution may be to design an instructional program with a systematic approach that could integrate some instructional elements that are less conspicuous to improve the likelihood of adoption. Choice and the use of self-monitoring are examples of instructional elements that could be used. More research will need to go into determining elements that appeal to teachers' perceptions of reading programs, while maintaining the fidelity of direct instructional approaches. Measures of teacher judgments could be helpful in the development of future reading programs.

A survey by Baumann et al. (1998) indicated that the goal of 94% of teachers was to help students develop into independent readers who were motivated to choose books and enjoy literature. However, what is critical is that students are more motivated when they experience success and demonstrate the skills necessary to read (Sweet, Gutherie, & Ng, 1998). Immersing children in literature has been identified by meaning-based enthusiasts to increase motivation, but leaving a child to struggle will do nothing but undermine motivation. Results from this research support the notion that teacher's attitudes about the reading program influence their perceptions of how intrinsically motivated students will be. It is important to note that observer's judgments about how a student feels may be contrary to how a student is actually feeling. In fact several researchers (i.e. Cameron & Pierce, 1994; Bandura,1986) have found that competency increases motivation for students. Extrinsic incentives can be used to establish competencies and to convey to a student the importance of reading. Rewards have found to be effective at improving performance and increasing intrinsic motivation in several studies (i.e. Cameron, et al., 2001; Cameron & Pierce, 1994; Cameron, Pierce, Banko, & Gear, 2005, Deci et al., 1999); rewards have also been found to be particularly effective when students are rewarded for performing low interest tasks.

Practically, results from the present research could have a strong impact on teacher education programs. The three studies indicated that the results were strongest with pre-service teachers. That is, pre-service teachers saw direct teaching procedures and tangible rewards as very controlling and detrimental to a student's self-worth. An examination of teacher education programs and the influence of meaning-based programs to teach reading, particularly with struggling readers should be undertaken to determine what teaching procedures are advocated in pre-service teacher education programs. It is possible that pre-service teachers are not presented with evidence regarding effectiveness of direct teaching procedures.

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Appendix [illegible]

Participant Consent Form

This research project is designed to investigate pre-service teachers' perceptions of reading programs. You will be asked to read a vignette about a grade 1 student in a reading program. You will then be asked to complete a questionnaire based on the vignette you read. The study will take about 20 minutes. This research is part of Rhonda Wozniak's Doctoral Dissertation Research and may be included in research articles and presentations. Data for all uses will be handled in compliance with the Ethical Standards outlined by the University of Alberta.

Research Investigators

Rhonda Wozniak	492-[illegible]	Doctoral Student Department of Ed. Psych.
Dr. Judy Cameron	492-[illegible]	Department of Ed. Psych.

- Your participation in this research is solicited, but is strictly voluntary.
- If you agree to participate, you are free to withdraw at any time.
- All information gained from this study is confidential.
- All participants are identified by number only; no individual will be identified by name. As well, your name will not be associated with the research findings.
- Your responses to all material will be anonymous.
- All data will be securely kept in a locked office at the University for a period of 5 years.

Do not hesitate to ask any questions about the study and feel free to contact the research investigators about any aspects of the study you would like to discuss.

If you agree to participate in this study, please sign below.

Name of Participant: ______________________________

Signature: ______________________________

Date: ______________________________

The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education and Extension Research Ethics Board (EE REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EE REB at (780) [illegible].

Appendix B

Scenarios for Study 1

Stated Contingency / Tangible /Direct Instruction

Jennifer is a 7 year old student in grade 2. Before entering grade 2, her grade 1 teacher reported that she had not developed any reading skills. The other children in Jennifer's class are reading at grade level.

Due to her reading difficulties, Jennifer's teacher sets up a reading program based on a direct instruction model. To conduct this program, a teacher assistant has been assigned to work with Jennifer during the reading period.

To begin the program, the teacher assistant teaches Jennifer the sounds that each letter makes. Jennifer practices the letter sounds everyday. When she has mastered some letter sounds, she is given basic words that contain the letter sounds she has learned. In addition, Jennifer is taught some basic sight words, such as "the", using the look and say method. When Jennifer has learned to read and sound out a series of words, she practices reading the words in sentences. The curriculum is carefully structured and sequenced so each skill builds on the previous skill learned. The program has Jennifer engage in a lot of successful practice and mastery before moving on to new skills.

Once Jennifer is able to read some words, the teacher assistant then chooses a series of popular basic readers for Jennifer. The readers begin with common vocabulary and get increasingly difficult. The books later in the series present interesting short stories. During this reading period, the teacher assistant tells Jennifer, "When you read 2 pages aloud without any errors, you will receive a token". The tokens can then be exchanged for rewards such as computer time, stickers, or pencils that are listed in a rewards catalogue. After each day, the number of pages Jennifer is required to read aloud without errors is increased by one. Jennifer participates daily in the program for 12 weeks.

No Stated Contingency / Praise /Direct Instruction

Jennifer is a 7 year old student in grade 2. Before entering grade 2, her grade 1 teacher reported that she had not developed any reading skills. The other children in Jennifer's class are reading at grade level.

Due to her reading difficulties, Jennifer's teacher sets up a reading program based on a direct instruction model. To conduct this program, a teacher assistant has been assigned to work with Jennifer during the reading period.

To begin the program, the teacher assistant teaches Jennifer the sounds that each letter makes. Jennifer practices the letter sounds everyday. When she has mastered some letter sounds, she is given basic words that contain the letter sounds she has learned. In addition, Jennifer is taught some basic sight words, such as "the", using the look and say method. When Jennifer has learned to read and sound out a series of words, she practices reading the words in sentences. The curriculum is carefully structured and sequenced so each skill builds on the previous skill learned. The program has Jennifer engage in a lot of successful practice and mastery before moving on to new skills.

Once Jennifer is able to read some words, the teacher assistant then chooses a series of popular basic readers for Jennifer. The readers begin with common vocabulary and get increasingly difficult. The books later in the series present interesting short stories. After each day, the number of pages Jennifer is required to read aloud without errors is increased by one. The teacher assistant rewards Jennifer with praise throughout the program. Jennifer participates daily in the program for 12 weeks.

No Stated Contingency / Praise / Meaning Based Instruction

Jennifer is a 7 year old student in grade 2. Before entering grade 2, her grade 1 teacher reported that she had not developed any reading skills. The other children in Jennifer's class are reading at grade level.

Due to her reading difficulties, Jennifer's teacher sets up a reading program based on a whole language or meaning-based instructional model. To conduct this program, a teacher assistant has been assigned to work with Jennifer during the reading period.

To begin the program, the teacher assistant sets up an area of the room with literature that Jennifer may be interested in. She has Jennifer come to the area of the room and observes the books that Jennifer is interested in. During the sessions, the teaching assistant begins reading books to Jennifer that she has shown an interest in. She asks Jennifer to "read" her back the stories, telling the stories from the pictures. If Jennifer asks the teaching assistant how to read words or what sounds letter make, the teacher assistant will identify the teachable moment and will tell her. During this time, the teacher assistant uses games, drawing, and rhymes to talk about reading as Jennifer has shown an interest in these activities. The curriculum is meaning-based so Jennifer is allowed to add, omit, and substitute words on the page as she is reading.

Once Jennifer is interested in reading, the teacher assistant then chooses a series of popular basic readers for Jennifer. The readers begin with common vocabulary and get increasingly difficult. The books later in the series present interesting short stories. After each day, the number of pages Jennifer is required to read aloud is increased by one. The teacher assistant rewards Jennifer with praise throughout the program. Jennifer participates daily in the program for 12 weeks.

Appendix C

Questionnaire for Study 1

Test that participants have read vignettes

1. What grade is Jennifer in? ________________
2. The other students in the class are reading
   a. at grade level b. above grade level c. below grade level
3. What word is used to describe the stories that Jennifer is reading? a. boring b. difficult c. interesting
4. What was Jennifer rewarded with in the program?
   ____

Place an X on the line that best represents your position.

1. The teaching procedures used in Jennifer's reading program are:

clear ___ ___ ___ ___ ___ ___ ___ vague

explicit ___ ___ ___ ___ ___ ___ ___ ambiguous

fair ___ ___ ___ ___ ___ ___ ___ unfair

subtle ___ ___ ___ ___ ___ ___ ___ obvious

controlling ___ ___ ___ ___ ___ ___ ___ not controlling

unnoticeable ___ ___ ___ ___ ___ ___ ___ visible

glaring ___ ___ ___ ___ ___ ___ ___ hidden

motivating ___ ___ ___ ___ ___ ___ ___ discouraging

conspicuous ___ ___ ___ ___ ___ ___ ___ inconspicuous

authoritative ___ ___ ___ ___ ___ ___ ___ flexible

2. The reward procedures used are:

controlling __ __ __ __ __ __ __ not controlling

unnoticeable __ __ __ __ __ __ __ visible

obvious __ __ __ __ __ __ __ subtle

glaring __ __ __ __ __ __ __ hidden

motivating __ __ __ __ __ __ __ discouraging

clear __ __ __ __ __ __ __ vague

flexible __ __ __ __ __ __ __ authoritative

explicit __ __ __ __ __ __ __ ambiguous

fair __ __ __ __ __ __ __ unfair

motivating __ __ __ __ __ __ __ discouraging

conspicuous __ __ __ __ __ __ __ inconspicuous

3. The teaching program made Jennifer feel:

incompetent __ __ __ __ __ __ __ competent

anxious __ __ __ __ __ __ __ calm

capable __ __ __ __ __ __ __ unable

deserving __ __ __ __ __ __ __ guilty

bad __ __ __ __ __ __ __ good

at ease __ __ __ __ __ __ __ intimidated

free __ __ __ __ __ __ __ constrained

proud __ __ __ __ __ __ __ condemned

easy going __ __ __ __ __ __ __ overwhelmed positive __ __ __ __ __ __ __ negative

relaxed __ __ __ __ __ __ __ nervous

unsure __ __ __ __ __ __ __ confident

bored __ __ __ __ __ __ __ interested

motivated __ __ __ __ __ __ __ unmotivated

Please circle a response for each statement according to the following scale:

1 2 3 4 5 6 7
Not at all **Very Much**

Jennifer deserves credit for accomplishments in the reading program.

1 2 3 4 5 6 7

There are explicit incentives for Jennifer to read.

1 2 3 4 5 6 7

Jennifer felt controlled during the program.

1 2 3 4 5 6 7

Jennifer is motivated to read.

1 2 3 4 5 6 7

Jennifer's teacher assistant deserves credit for Jennifer's reading performance.

1 2 3 4 5 6 7

Jennifer's reading performance is self determined.

1 2 3 4 5 6 7

Jennifer's worth is threatened by participating in the program.

1 2 3 4 5 6 7

Jennifer's reading performance is due to:

effort	1	2	3	4	5	6	7
help from the teaching assistant	1	2	3	4	5	6	7
skill	1	2	3	4	5	6	7
pressure from situation	1	2	3	4	5	6	7
motivation	1	2	3	4	5	6	7
interest	1	2	3	4	5	6	7
feedback from the teacher assistant	1	2	3	4	5	6	7
rewards	1	2	3	4	5	6	7
luck	1	2	3	4	5	6	7

Jennifer's poor grade 1 reading performance may be attributed to:

her parents	1	2	3	4	5	6	7
Jennifer	1	2	3	4	5	6	7
her teacher	1	2	3	4	5	6	7
school curriculum	1	2	3	4	5	6	7
reading program used	1	2	3	4	5	6	7
school system	1	2	3	4	5	6	7
administration	1	2	3	4	5	6	7

How poorly or well do you think Jennifer will be reading in 12 weeks?

very poorly 1 2 3 4 5 6 7 very well

How competent do you think Jennifer will feel about reading in the future?

not at all competent	1	2	3	4	5	6	7	extremely competent

How much choice did Jennifer have as to whether or not to participate In the reading program?

very little 1 2 3 4 5 6 7 very much

13) Imagine you had 10 dollars to give out based on the credit that is deserved for Jennifer's performance. How much would you give to:

Jennifer _______________ Jennifer's teacher _______________ The teacher assistant _______________ (Remember these 3 numbers should add up to 10)

Please circle a response for each statement according to the following scale:

1 2 3 4 5 6 7
Not at all **Very Much**

14) During her summer holidays, Jennifer will read in her free time.

1 2 3 4 5 6 7

15) When it comes to reading, Jennifer is controlled.

1 2 3 4 5 6 7

16) Jennifer will be motivated to read on her summer holidays.

1 2 3 4 5 6 7

17) Jennifer will enjoy reading on her summer holidays.

1 2 3 4 5 6 7

18) Jennifer's teacher deserves credit for Jennifer's reading performance.

1 2 3 4 5 6 7

19) Jennifer's reading performance is admirable.

1 2 3 4 5 6 7

20) In grade 3, Jennifer's reading performance will be due to:

effort	1	2	3	4	5	6	7
help during grade 2	1	2	3	4	5	6	7
motivation	1	2	3	4	5	6	7
skill	1	2	3	4	5	6	7
interest	1	2	3	4	5	6	7
feedback from the teacher assistant in grade 2	1	2	3	4	5	6	7
rewards during the grade 2 program	1	2	3	4	5	6	7
luck	1	2	3	4	5	6	7

Appendix D

Debriefing

Thank you for participating in my study. The overall purpose of this research is to assess how preservice elementary school teachers view different types of reading programs and the use of rewards in the programs. I have asked you to participate in order determine your perceptions of direct versus meaning-based programs. Each of you was given a scenario. There were 3 different scenarios randomly distributed throughout the class. Two of the scenarios depicted a direct teaching program that varied in whether students received a tangible reward (points) or praise. One scenario depicted a meaning-based program where the student was rewarded with praise. There was no performance standard in the meaning-based scenarios. The questionnaire was designed to assess whether the type of reading program, reward, and whether or not the student had to reach a performance standard to receive the reward affects how you think the student will do in the program and who will be given credit for the student's performance. We were also interested in whether the student in the scenario should be given credit for his/her performance, whether the student's behaviour is due to internal or external causes, and perceptions of student motivation.

The practical implications of this study are to provide guidance in determining components of reading programs which may be more widely used by educators such as yourselves. This may be particularly important for beginning teachers who are in the process of deciding what instructional approach would be most useful when they are teaching early or struggling readers. The research will also provide insight into the emotional and behavioural reactions teachers have about students that are only reading under structured circumstances. This may provide useful information when working with struggling readers.

As I stated at the beginning, all the data are confidential and none of you will be identified by name. Thank you again. Please feel free to contact me if you have any questions.

Rhonda Wizniak 492-2349

Appendix E

Scenarios for Study 2 and Study 3

A Remedial Reading Program-Direct, Token, Performance Standard

Jennifer is a 7 year old student in grade 2. Before entering grade 2, her grade 1 teacher reported that she had not developed any reading skills, even though she is of average intelligence. Most of the other children in Jennifer's class are reading at grade level. Therefore, Jennifer is placed in a remedial program with other students experiencing reading difficulties.

Due to the students' reading difficulties, Jennifer's reading teacher sets up a reading program based on a direct teaching model. To assist with the program, a teacher assistant has been assigned to work with Jennifer's class during the reading periods.

To begin a typical direct teaching lesson, the reading teacher reads the students a story at the reading centre. Before reading the story, Jennifer's teacher tells that students that the story will include the letter sounds and words they are going to learn that day. The teacher also reviews words and letter sounds they have learned during previous lessons. After the story, Jennifer and her classmates go to their desks for a lesson on letter sounds and words that could be made with the sounds they have learned. The teacher also teaches the students one sight word each day.

Jennifer then works with the teaching assistant. During this time, Jennifer practices reading words to the assistant that they have learned during the lesson. When Jennifer has learned to read and sound out a series of words, she practices reading the words in sentences. The curriculum is carefully arranged and sequenced so that each skill builds on the previous skills learned. Jennifer engages in a lot of successful practice and mastery before moving on to new skills. At the end of each lesson, the students are given the opportunity to look at a wide variety of books they choose at the reading centre.

Once Jennifer is able to read some words, the teacher assistant chooses a series of popular, interesting basic readers for Jennifer. The teacher assistant selects some books at Jennifer's reading level and Jennifer chooses one of the books from the selection the teacher assistant has provided. The readers begin with common vocabulary that Jennifer has mastered and gradually get more difficult as her reading skills increase. The books later in the series present interesting short stories. The teacher assistant tells Jennifer that she is ready to read.

During this reading period, the teaching assistant listens to Jennifer read one of the books she has selected and provides corrective feedback when Jennifer reads a word incorrectly. After each day, the number of pages Jennifer is asked to read aloud without errors is gradually increased. If Jennifer is making errors, the teaching assistant returns to a reader that Jennifer has already mastered and begins to work forward again. At the beginning of the program, the teacher assistant says, "When you read 1 page aloud without any errors, you will receive a token". The tokens are exchanged for rewards such as computer time, stickers, or pencils that are listed in a rewards catalogue. Jennifer participates daily in the program for 12 weeks.

A Remedial Reading Program-Direct, Praise, Performance Standard

Jennifer is a 7 year old student in grade 2. Before entering grade 2, her grade 1 teacher reported that she had not developed any reading skills, even though she is of average intelligence. Most of the other children in Jennifer's class are reading at grade level. Therefore, Jennifer is placed in a remedial program with other students experiencing reading difficulties.

Due to the students' reading difficulties, Jennifer's reading teacher sets up a reading program based on a direct teaching model. To assist with the program, a teacher assistant has been assigned to work with Jennifer's class during the reading periods.

To begin a typical direct teaching lesson, the reading teacher reads the students a story at the reading centre. Before reading the story, Jennifer's teacher tells that students that the story will include the letter sounds and words they are going to learn that day. The teacher also reviews words and letter sounds they have learned during previous lessons. After the story, Jennifer and her classmates go to their desks for a lesson on letter sounds and words that could be made with the sounds they have learned. The teacher also teaches the students one sight word each day.

Jennifer then works with the teaching assistant. During this time, Jennifer practices reading words to the assistant that they have learned during the lesson. When Jennifer has learned to read and sound out a series of words, she practices reading the words in sentences. The curriculum is carefully arranged and sequenced so that each skill builds on the previous skills learned. Jennifer engages in a lot of successful practice and mastery before moving on to new skills. At the end of each lesson, the students are given the opportunity to look at a wide variety of books they choose at the reading centre.

Once Jennifer is able to read some words, the teacher assistant chooses a series of popular, interesting basic readers for Jennifer. The teacher assistant selects some books at Jennifer's reading level and Jennifer chooses one of the books from the selection the teacher assistant has provided. The readers begin with common vocabulary that Jennifer has mastered and gradually get more difficult as her reading skills increase. The books later in the series present interesting short stories. The teacher assistant tells Jennifer that she is ready to read.

During this reading period, the teaching assistant listens to Jennifer read one of the books she has selected and provides corrective feedback when Jennifer reads a word incorrectly. After each day, the number of pages Jennifer is asked to read aloud without errors is gradually increased. If Jennifer is making errors, the teaching assistant returns to a reader that Jennifer has already mastered and begins to work forward again. The teaching assistant rewards Jennifer with praise each time she reads a page correctly. Jennifer participates daily in the program for 12 weeks.

A Remedial Reading Program-Meaning, Praise, No Performance Standard

Jennifer is a 7 year old student in grade 2. Before entering grade 2, her grade 1 teacher reported that she had not developed any reading skills, even though she is of average intelligence. Most of the children in Jennifer's class are reading at grade level. Therefore, Jennifer is placed in a remedial reading class with other students experiencing reading difficulties.

Due to her reading difficulties, Jennifer's reading teacher sets up a reading program based on a meaning-based teaching model. To conduct this program, a teacher assistant has been assigned to work with Jennifer's class during the reading periods.

To begin a typical meaning-based lesson, the reading teacher reads the students a story at the reading centre. Before reading the story, Jennifer's teacher shows the students the book's illustrations and introduces new vocabulary words. The teacher also reviews what the students already know about the topic that the book presents. After the story, Jennifer and her classmates go to centres that provide language-based activities to encourage students to make meaning from different types of text. Jennifer's teacher walks around the room and provides guidance to the students during the activities.

Jennifer then works with the teaching assistant. During this time, Jennifer chooses a book that she is interested in and sits with the teacher assistant. Jennifer tells the teaching assistant the story from the pictures. The teacher assistant talks to Jennifer about the sounds that letters make and answers Jennifer's questions about how to read some of the words. She often has Jennifer reread books to practice what she has learned. The curriculum includes using games, drawing, writing, and rhymes to talk to students about reading and constructing meaning from text. Jennifer engages in a lot of different activities that she can revisit throughout the year. At the end of each lesson, students are given the opportunity to look at a wide variety of books at the reading centre.

Once Jennifer has had some experience with books and worked in the language centres, the teacher assistant asks Jennifer to choose some new books from the reading centre based on her interest areas. The books in the reading centre are on a wide range of topics and are written for a range of reading levels. The teacher assistant tells Jennifer that she is ready to read.

During this reading period, the teacher assistant listens to Jennifer read one of the books she has selected and provides corrective feedback when Jennifer is off track. Jennifer is allowed to make errors while reading by adding, omitting, and substituting words based on her personal interpretation of the text. After each day, the number of pages Jennifer reads aloud is increased. The teacher assistant rewards Jennifer with praise throughout the program. Jennifer participates daily in the program for 12 weeks.

A Remedial Reading Program-Direct, Praise, No Performance Standard

Jennifer is a 7 year old student in grade 2. Before entering grade 2, her grade 1 teacher reported that she had not developed any reading skills, even though she is of average intelligence. Most of the other children in Jennifer's class are reading at grade level. Therefore, Jennifer is placed in a remedial program with other students experiencing reading difficulties.

Due to the students' reading difficulties, Jennifer's reading teacher sets up a reading program based on a direct teaching model. To assist with the program, a teacher assistant has been assigned to work with Jennifer's class during the reading periods.

To begin a typical direct teaching lesson, the reading teacher reads the students a story at the reading centre. Before reading the story, Jennifer's teacher tells that students that the story will include the letter sounds and words they are going to learn that day. The teacher also reviews words and letter sounds they have learned during previous lessons. After the story, Jennifer and her classmates go to their desks for a lesson on letter sounds and words that could be made with the sounds they have learned. The teacher also teaches the students one sight word each day.

Jennifer then works with the teaching assistant. During this time, Jennifer practices reading words to the assistant that they have learned during the lesson. When Jennifer has learned to read and sound out a series of words, she practices reading the words in sentences. The curriculum is carefully arranged and sequenced so that each skill builds on the previous skills learned. Jennifer engages in a lot of successful practice and mastery before moving on to new skills. At the end of each lesson, the students are given the opportunity to look at a wide variety of books they choose at the reading centre.

Once Jennifer is able to read some words, the teacher assistant chooses a series of popular, interesting basic readers for Jennifer. The teacher assistant selects some books at Jennifer's reading level and Jennifer chooses one of the books from the selection the teacher assistant has provided. The readers begin with common vocabulary that Jennifer has mastered and gradually get more difficult as her reading skills increase. The books later in the series present interesting short stories. The teacher assistant tells Jennifer that she is ready to read.

During this reading period, the teaching assistant listens to Jennifer read one of the books she has selected and provides corrective feedback when Jennifer reads a word incorrectly. After each day, the number of pages Jennifer is asked to read aloud is gradually increased. If Jennifer is making errors, the teaching assistant returns to a reader that Jennifer has already mastered and begins to work forward again. The teaching assistant rewards Jennifer with praise throughout the program. Jennifer participates daily in the program for 12 weeks.

A Remedial Reading Program, Direct, Reward, No Performance Standard

Jennifer is a 7 year old student in grade 2. Before entering grade 2, her grade 1 teacher reported that she had not developed any reading skills, even though she is of average intelligence. Most of the other children in Jennifer's class are reading at grade level. Therefore, Jennifer is placed in a remedial program with other students experiencing reading difficulties.

Due to the students' reading difficulties, Jennifer's reading teacher sets up a reading program based on a direct teaching model. To assist with the program, a teacher assistant has been assigned to work with Jennifer's class during the reading periods.

To begin a typical direct teaching lesson, the reading teacher reads the students a story at the reading centre. Before reading the story, Jennifer's teacher tells that students that the story will include the letter sounds and words they are going to learn that day. The teacher also reviews words and letter sounds they have learned during previous lessons. After the story, Jennifer and her classmates go to their desks for a lesson on letter sounds and words that could be made with the sounds they have learned. The teacher also teaches the students one sight word each day.

Jennifer then works with the teaching assistant. During this time, Jennifer practices reading words to the assistant that they have learned during the lesson. When Jennifer has learned to read and sound out a series of words, she practices reading the words in sentences. The curriculum is carefully arranged and sequenced so that each skill builds on the previous skills learned. Jennifer engages in a lot of successful practice and mastery before moving on to new skills. At the end of each lesson, the students are given the opportunity to look at a wide variety of books they choose at the reading centre.

Once Jennifer is able to read some words, the teacher assistant chooses a series of popular, interesting basic readers for Jennifer. The teacher assistant selects some books at Jennifer's reading level and Jennifer chooses one of the books from the selection the teacher assistant has provided. The readers begin with common vocabulary that Jennifer has mastered and gradually get more difficult as her reading skills increase. The books later in the series present interesting short stories. The teacher assistant tells Jennifer that she is ready to read.

During this reading period, the teaching assistant listens to Jennifer read one of the books she has selected and provides corrective feedback when Jennifer reads a word incorrectly. After each day, the number of pages Jennifer is asked to read aloud is gradually increased. If Jennifer is making errors, the teaching assistant returns to a reader that Jennifer has already mastered and begins to work forward again. At the beginning of the program, the teacher assistant says, "After each reading period, you will receive a token". The tokens are exchanged for rewards such as computer time, stickers, or pencils that are listed in a rewards catalogue. Jennifer participates daily in the program for 12 weeks.

A Remedial Reading Program-Meaning, Reward, No Performance Standard

Jennifer is a 7 year old student in grade 2. Before entering grade 2, her grade 1 teacher reported that she had not developed any reading skills, even though she is of average intelligence. Most of the children in Jennifer's class are reading at grade level. Therefore, Jennifer is placed in a remedial reading class with other students experiencing reading difficulties.

Due to her reading difficulties, Jennifer's reading teacher sets up a reading program based on a meaning-based teaching model. To conduct this program, a teacher assistant has been assigned to work with Jennifer's class during the reading periods.

To begin a typical meaning-based lesson, the reading teacher reads the students a story at the reading centre. Before reading the story, Jennifer's teacher shows the students the book's illustrations and introduces new vocabulary words. The teacher also reviews what the students already know about the topic that the book presents. After the story, Jennifer and her classmates go to centres that provide language-based activities to encourage students to make meaning from different types of text. Jennifer's teacher walks around the room and provides guidance to the students during the activities.

Jennifer then works with the teaching assistant. During this time, Jennifer chooses a book that she is interested in and sits with the teacher assistant. Jennifer tells the teaching assistant the story from the pictures. The teacher assistant talks to Jennifer about the sounds that letters make and answers Jennifer's questions about how to read some of the words. She often has Jennifer reread books to practice what she has learned. The curriculum includes using games, drawing, writing, and rhymes to talk to students about reading and constructing meaning from text. Jennifer engages in a lot of different activities that she can revisit throughout the year. At the end of each lesson, students are given the opportunity to look at a wide variety of books at the reading centre.

Once Jennifer has had some experience with books and worked in the language centres, the teacher assistant asks Jennifer to choose some new books from the reading centre based on her interest areas. The books in the reading centre are on a wide range of topics and are written for a range of reading levels. The teacher assistant tells Jennifer that she is ready to read.

During this reading period, the teacher assistant listens to Jennifer read one of the books she has selected and provides corrective feedback when Jennifer is off track. Jennifer is allowed to make errors while reading by adding, omitting, and substituting words based on her personal interpretation of the text. After each day, the number of pages Jennifer reads aloud is increased. At the beginning of the program, the teacher assistant says, "After each reading period, you will receive a token". The tokens are exchanged for rewards such as computer time, stickers, or pencils that are listed in a rewards catalogue. Jennifer participates daily in the program for 12 weeks.

Appendix F

Questionnaire for Study 2 and Study 3

How many courses in the Department of Education have you participated in (include courses that you have completed or are currently enrolled in)? ________________

Gender: MALE FEMALE

Have you completed your IPT? YES NO

Have you completed your APT? YES NO

5. What grade is Jennifer in? ________________

6. Most of the other students in Jennifer's regular class are reading
    a. at grade level
    b. above grade level
    c. below grade level

7. What was Jennifer's reading rewarded with in the program?
    a. tokens to be exchanged for stickers, pencils, etc
    b. praise
    c. there was no reward

8. What must Jennifer do to receive a reward
    a. nothing
    b. read without making errors
    c. read

5. How long does Jennifer participate in the program for? __________ weeks

Place an X on the line that best represents your position.

6. The teaching procedures used in Jennifer's reading program are:

clear __ __ __ __ __ __ __ vague

explicit __ __ __ __ __ __ __ ambiguous

fair __ __ __ __ __ __ __ unfair

subtle __ __ __ __ __ __ __ obvious

controlling __ __ __ __ __ __ __ self-initiating

unnoticeable __ __ __ __ __ __ __ visible

glaring __ __ __ __ __ __ __ hidden

motivating __ __ __ __ __ __ __
discouraging

authoritative __ __ __ __ __ __ __ flexible

unconstraining __ __ __ __ __ __ __ coercive

7. The reward procedures used are:

controlling __ __ __ __ __ __ __ self-initiating

unnoticeable __ __ __ __ __ __ __ visible

obvious __ __ __ __ __ __ __ subtle

glaring __ __ __ __ __ __ __ hidden

unconstraining __ __ __ __ __ __ __ coercive

motivating __ __ __ __ __ __ __ discouraging

clear __ __ __ __ __ __ __ vague

flexible __ __ __ __ __ __ __ authoritative

explicit __ __ __ __ __ __ __ ambiguous

fair __ __ __ __ __ __ __ unfair

8. The teaching program made Jennifer feel:

incompetent __ __ __ __ __ __ __ competent

anxious __ __ __ __ __ __ __ calm

capable __ __ __ __ __ __ __ unable

deserving __ __ __ __ __ __ __ unworthy

bad __ __ __ __ __ __ __ good

at ease __ __ __ __ __ __ __ intimidated

free __ __ __ __ __ __ __ constrained

proud __ __ __ __ __ __ __ humble

easy going __ __ __ __ __ __ __ overwhelmed

worthless __ __ __ __ __ __ __ valuable

positive __ __ __ __ __ __ __ negative

relaxed __ __ __ __ __ __ __ nervous

unsure __ __ __ __ __ __ __ confident

bored __ __ __ __ __ __ __ interested

motivated __ __ __ __ __ __ __ uninspired

9) How successful do you think that Jennifer will be in the reading program?

Very Successful 1 2 3 4 5 6 7 Not
Successful

Please circle a response for each statement according to the following scale:

1 2 3 4 5 6
Not at all Very Much

10) Jennifer's performance in the reading program is due to:

her own effort	1	2	3	4	5	6
help from TA	1	2	3	4	5	6
her ability	1	2	3	4	5	6
pressure from the program	1	2	3	4	5	6
her motivation	1	2	3	4	5	6
her interest	1	2	3	4	5	6
feedback	1	2	3	4	5	6
rewards	1	2	3	4	5	6
books used	1	2	3	4	5	6
teacher	1	2	3	4	5	6
pressure from TA	1	2	3	4	5	6
reading program used	1	2	3	4	5	6
amount of practice	1	2	3	4	5	6

Please circle a response for each statement according to the following scale:

1 2 3 4 5 6 7
Not at all Very Much

11) Jennifer is reading

Because she chose to	1	2	3	4	5	6	7
Because she felt she had to	1	2	3	4	5	6	7
Because she was pressured	1	2	3	4	5	6	7
Because she wanted to	1	2	3	4	5	6	7

12) When reading, Jennifer felt like she was pursuing her own goals.

1 2 3 4 5 6 7

13) Jennifer deserves credit for accomplishments in the reading program.

1 2 3 4 5 6 7

14) There are explicit incentives for Jennifer to read.

1 2 3 4 5 6 7

15) Jennifer should be commended for her reading performance.

1 2 3 4 5 6 7

16) Jennifer felt controlled during the program.

1 2 3 4 5 6 7

17) Jennifer is motivated to read.

1 2 3 4 5 6 7

18) Jennifer's teacher assistant deserves credit for Jennifer's reading performance.

1 2 3 4 5 6 7

19) Jennifer's reading performance is self-determined.

1 2 3 4 5 6 7

20) Jennifer felt like she had control over what she was doing.

1 2 3 4 5 6 7

21) Jennifer's self-worth is lessened by participating in the program.

1 2 3 4 5 6 7

22) Jennifer is able to read because she put in effort.

1 2 3 4 5 6 7

23) Jennifer should be acknowledged for her performance in the reading program.

1 2 3 4 5 6 7

24) How poorly (or well) do you think Jennifer will be reading in 12 weeks?

very poorly 1 2 3 4 5 6 7 very well

25) Jennifer's reading performance during the program was

Totally due to Jennifer1 2 3 4 5 6 7 Totally due to
others

26) How competent do you think Jennifer will feel about reading in the future?

not at all extremely
competent 1 2 3 4 5 6 7 competent

27) How much choice did Jennifer have to participate in the reading program?

very little 1 2 3 4 5 6 7 very much

28) Jennifer's reading performance during the program something that

Reflects an aspect of 1 2 3 4 5 6 7 Reflects an aspect
the situation of Jennifer

29) Who deserves the most credit for improvements in Jennifer's reading performance?

a. Teacher b. Teacher Assistant c. Jennifer

30) Who deserves the least credit for improvements in Jennifer's reading performance?

a. Teacher b. Teacher Assistant c. Jennifer

On a scale of 0 to 100 percent what is the likelihood of the following (circle one):

31) The instructional program will result in Jennifer improving her reading.

No likelihood 0 10 20 30 40 50 60 70 80 90 100 Complete Certainty

32) The reward procedures used by the TA will result in Jennifer improving her reading.

No likelihood 0 10 20 30 40 50 60 70 80 90 100 Complete Certainty

33) Jennifer will read most of the time without errors.

No likelihood 0 10 20 30 40 50 60 70 80 90 100 Complete Certainty

34) Jennifer will read at grade level after the 12 week program.

No likelihood 0 10 20 30 40 50 60 70 80 90 100 Complete Certainty

35) Jennifer will read books in the summer just for fun.

No likelihood 0 10 20 30 40 50 60 70 80 90 100 Complete Certainty

36) Jennifer will need a remedial reading program in grade 3 next year.

No likelihood 0 10 20 30 40 50 60 70 80 90 100 Complete Certainty

37) Jennifer will become an avid reader throughout her life.

No likelihood 0 10 20 30 40 50 60 70 80 90 100 Complete Certainty

Please circle a response for each statement according to the following scale:

1	**2**	**3**	**4**	**5**	**6**	**7**
Not at all Likely						**Extremely Likely**

38) During her summer holidays, Jennifer will read in her free time.

1 2 3 4 5 6 7

39) Jennifer will read each day of her summer holidays.

1 2 3 4 5 6 7

40) Jennifer will be motivated to read during her summer holidays.

1 2 3 4 5 6 7

42) Jennifer will enjoy reading during her summer holidays.

1 2 3 4 5 6 7